

# skin diver

SKIN DIVER THE FOREMOST AUTHORITY IN ITS FIELD



\$1.50  
IN CANADA  
\$1.75

NOVEMBER 1978

SDM  
Rates

## Tortola's Top Ten

**SECRETS OF THE  
SEA OF CORTEZ**

**BATTLE OF  
THE SLUDGE**

**MEET FISHHOOK**  
The Friendly Harbor Seal

**RESIN CASTING**  
New Art Form For Divers





# SCUBAPRO SWEEPSTAKES

Everyone Who Enters The Scubapro Christmas Sweepstakes Is A Winner

# 1

## FIRST PRIZE

### A Datsun Lil Hustler

WIN your own set of scuba wheels. This economical Datsun Lil Hustler pick-up truck will take you to your favorite water hole in scuba style.

# 2

## SECOND PRIZE

An all expense paid trip for two to Anthony's Key Resort

# 3

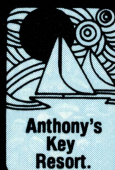
AND

# 4

## THIRD AND FOURTH PRIZES A Tad Kayak

The Tad 4.2 meter Offshore Kayak gives you a simple new way to go down to those previously hard to get to places. Sporting a safe open cockpit design, positive flotation, moulded diving tank well and 6 cubic feet of water free storage, the Tad is light (45 lbs.) and durable (3 layers of hand laid fiberglass). It's new, it's exciting, it's simple and it works!

IMPORTANT NOTE: No purchase necessary. Enter as often as you like, but each entry must be accompanied by an official entry blank or your name and address clearly hand-printed on a blank 3x5 card. Scubapro 3105 E. Harcourt, Compton, CA 90221.



## HOW TO ENTER

Simply visit your local participating Scubapro dealer and ask for a Scubapro Christmas Sweepstakes Entry Form, then deposit your entry in the Scubapro Display. Drawings will be held in January, 1979 at the DEMA Show. One entry per dealer visit. Deadline for entries is December 24, 1978. Void wherever prohibited or restricted by law. Scubapro employees or their agents are not eligible. Available only at participating Scubapro dealers.



Seven nights and six days of diving the sparkling clear waters off the island of Roatan, Honduras. Includes airfare, hotel, meals, dive boat, gear rental, air and a variety of sideline activities.

**TAN** airlines **SAHSA** airlines

**Join the celebration. Gift a diver for Christmas with Scubapro.**

**EVERYBODY WINS**  
Get your  
Free Floating  
Key Chain



available only  
at participating  
Scubapro  
Dealers.



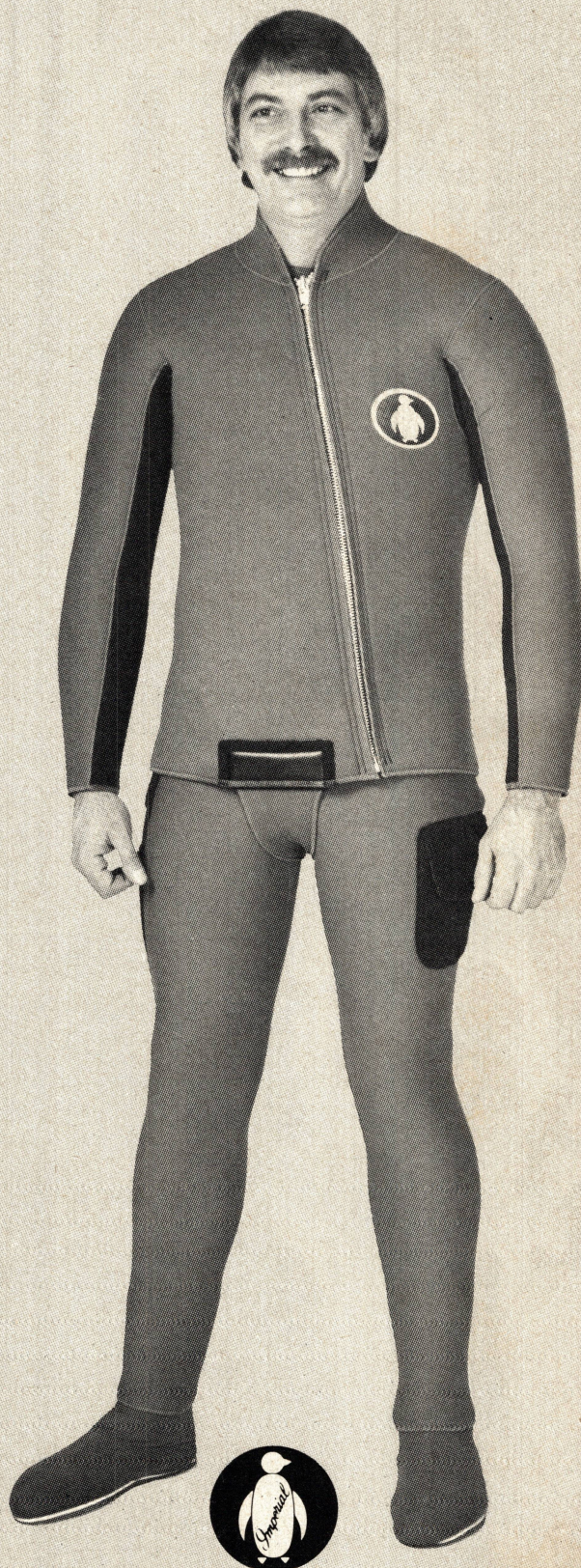
# NOT ALL PENGUINS ARE BLACK AND WHITE

## NEW FROM IMPERIAL!

An Imperial Penguin can select his own color combinations. The Penguin is Imperial's newest wetsuit design, unsurpassed in both comfort and style. Special contoured panels along the back and underarms actually conform to the shape of your body, eliminating water pockets and excess binding. For you, this means a warmer, more comfortable, and better fitting suit. Velcro beaver tail and slant-front zipper are standard. Order extra pockets, zippers, or other Special Features from the wide selection listed in our catalog\*. The Penguin is custom made to your exact measurements in 3/16" or 1/4" King Turtle or Glowflex. King Turtle is nylon both sides, with a textured exterior, available in blue or black. Glowflex (pictured) is a new super-soft nitrogen-blown rubber, also nylon inside and out, with a smooth surface which has reflective qualities when wet. Glowflex comes in blue, black, or orange. The Penguin may be ordered in solid colors or 2-tone, in Standard Pants or Farmer (bib) Style.



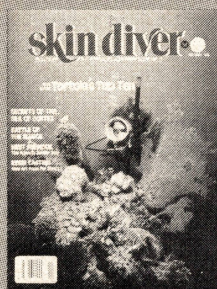
\*For your copy of our colorful 1978 **Imperial** catalog, send one dollar.



# IMPERIAL

IMPERIAL MANUFACTURING, P.O. BOX 4119, Bremerton, Washington 98310 (206) 674-2316





# skin diver

Volume Twenty-Seven Number Eleven

## COVER

Luana Marler admires clumps of delicate lavender and blue tunicates growing on the anchor of the Rhone. Lost when the ship tried to outrun the violent hurricane which sank it in 1867, the coral encrusted anchor was found by Tortola dive shop owner George Marler. Photo by Paul Tzimoulis.



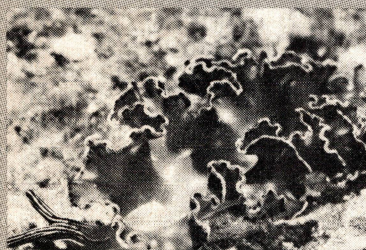
40/Underwater Army



48/Furry Friend



52/Playing Picasso



56/Southern Secrets

## MARINE LIFE

### 12 SEAHORSES GERI MURPHY

Unique sea creatures living a bizarre existence

## DIVE TECHNIQUES

### 24 MUSSELS HERB TAYLOR

How to prepare a shellfish delight

### 64 BOTTOM BUFFING FOR BUCKS AL HORNSBY

Make money while supporting your habit

## WRECK DIVING

### 32 THE CHESTER A. POLLING PAUL ADLER AND JACK HINZ

New England's latest shipwreck

## CONSERVATION

### 40 BATTLE OF THE SLUDGE BILL BARADA

Delaware Valley divers battle the EPA to save our seas

## LOCAL DIVING

### 48 FISHHOOK CHRIS MEIER TRUSTY

Catalina's friendly harbor seal

## U/W HOBBIES

### 52 CREATIVE CASTING BONNIE J. CARDONE

An exciting new art form for divers

## FOREIGN TRAVEL

### 56 SECRETS OF THE SEA OF CORTEZ HOWARD HALL

Exotic diving along Baja California's primitive offshore islands

### 100 TORTOLA'S TOP TEN REEFS PAUL J. TZIMOULIS

The home of the Rhone offers numerous other beautiful dive sites

## INDUSTRY NEWS

### 59 U.S. DIVERS GROWS JOHN COLUMBIA

Dive equipment company embarks upon a major expansion plan

## DEPARTMENTS

8 U/W FORUM

19 SCUBA EXAM

23 SHOWS 'N EVENTS

30 FILM FESTIVALS

'N SYMPOSIUMS

38 NEW GEAR

60 MEDIFACTS

62 FISH OF THE MONTH

83 DIVER'S DIRECTORY

44 U/W PHOTOGRAPHY

## STAFF

PAUL TZIMOULIS Editor-Publisher

ART SMITH Art Director

BEVERLY DALBY Associate Editor

ELAINE VAILLANCOURT Ad Service Coordinator

CONNIE JOHNSON Managing Editor

BONNIE J. CARDONE Senior Editor

BEA HACKLER Ad Artist

## CONTRIBUTING EDITORS

BILL BARADA Environmental Editor

JIM & CATHY CHURCH Photography Editors

CHARLES V. BROWN, M.D. Medical Consultant

HILLARY HAUSER Special Features Editor

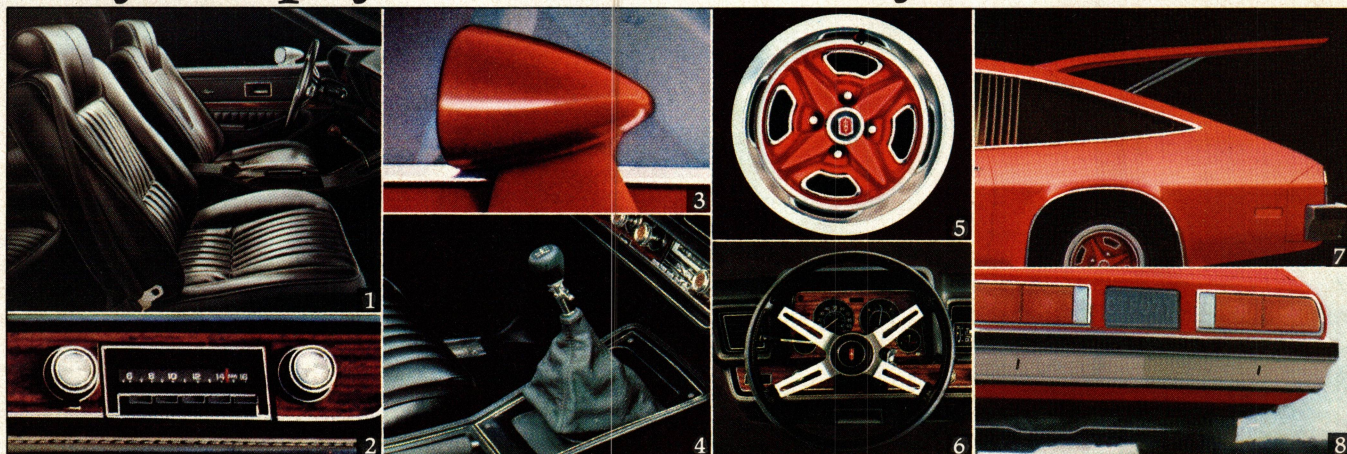
JACK McKENNEY Adventure Editor

E. R. CROSS Technifacts Editor

SKIN DIVER MAGAZINE, © Copyright 1978 by PETERSEN PUBLISHING COMPANY. All rights reserved. Published monthly by Petersen Publishing Company, 8490 Sunset Blvd., Los Angeles, California 90069. Second class postage paid at Los Angeles, California, and at additional mailing offices. Single copy \$1.50. Subscription inquiries phone (213) 657-5100. Subscription rates: U.S. Possessions one year \$10.95, two years \$19. All other countries one year \$13.95, two years \$25. CONTRIBUTIONS: Should be mailed to 8490 Sunset Blvd., Los Angeles, California 90069. They must be accompanied by return postage and we assume no responsibility for loss or damage thereto. Any material accepted is subject to such revision as is necessary in our sole discretion to meet the requirements of this publication. Upon acceptance, payment will be made at our current rate, which covers the author's and/or contributors right, title and interest in and to the material mailed including but not limited to photos, drawings, charts, and designs, which shall be considered as text. The act of mailing a manuscript and/or material shall constitute an express warranty by the contributor that the material is original and in no way an infringement upon the rights of others. CHANGE OF ADDRESS: Six weeks notice is required to change a subscriber's address. Please give both old and new address and label. Mail to P.O. Box 3295, Los Angeles, CA 90028. POSTMASTER: Please send form 3579 to Skin Diver Magazine, P.O. Box 3295, Los Angeles, California 90028.



Now Oldsmobile Starfire comes  
with standard sporty features  
you'd pay extra for in many other cars.



1. Bucket seats/2. AM radio/3. Sport mirrors/4. Console & 4-speed shifter/5. Sport wheels/6. Sport steering wheel/7. Hatchback/8. Rear stabilizer bar.



The 1979 Starfire. It gives you all the good stuff you see as standard equipment. And it's engineered to be an exciting road car as well — moving down a road with precision and authority is what a Starfire is all about.

But with all those road-wise qualities, all those standard features, you might think a Starfire is priced

out of reach. Not so, as you can see:

**\$4095<sup>00</sup>**

That's the manufacturer's suggested retail price, including dealer prep. Taxes, license, destination charges and other equipment additional.

So if you're looking for a sporty road car that's a lot of value for the money, here it is.

Test-drive a Starfire today... and discover that great Olds feeling!

*Oldsmobile*

**Starfire**

Have one built for you.





# Editorial

## The Measure of A Good Diver

BY THE PUBLISHER



**A**lmost every new diver coming into our sport is eager to prove to himself, and to his friends, that he is a *good diver* — that he measures up to the highest standards of the sport. Quite often he will seek ways to test his mettle — perhaps some sort of underwater competition or accomplishment that will prove beyond a doubt his personal ability and skill for diving.

In the early days of skin diving, a man proved his worth by the size and number of fish he speared. Look back through the old-time pages of skin diving magazines printed in the 50's and you'll find many photographs depicting beaming divers holding up large strings of dead fish.

Breath holding and prolonged free diving were other early day measures of dive skill. They went hand in hand with spearfishing and many a practitioner spent hours clinging to the bottom of a swimming pool ladder in an effort to improve his breath holding endurance. That was until the medical people blew the whistle and showed us how hyperventilation and overextension could easily result (and often did) in underwater blackout.

A more current, but equally insane, yardstick of the hero diver is deep diving with compressed air. In recent years, an astonishing number of misguided youths have met with tragic endings during scuba dives to 270, 300, and even 320 feet! In the eyes of most veteran divers and instructors, these deep diving fatalities were senseless, needless affairs because depth is certainly no measure of a person's diving ability. Instead, deep diving with compressed air is a certain sign of stupidity.

If it is not fish speared or depth dived, what then is the criteria for judging a person as a *good diver*? Or, more important, how do you spot a bad diver?

The qualities and characteristics which help to make a good diver are generally more subtle than a string of fish and one has to be a sharp observer to spot them. For example, it is not the magnitude of a diver's sea stories nor the

high grade on a final scuba course exam that proves an ability to dive. Instead, it is a diver's actions in and around the water that provide the clues: how he prepares for a dive, how he conducts himself underwater, and how he avoids accident situations. Here are a few of the signs to look for:

*Physical condition* — A good diver keeps himself in basically good physical condition so that he can enjoy his dives and avoid panic situations. If he plans to make an unusually strenuous dive or go on a lengthy dive vacation, he prepares himself by working out at the pool prior to the trip. A good diver also knows when to quit for the day. He knows the limit of his own physical endurance and will not push himself beyond this limit, regardless of how good the diving may be that particular day.

*Proper equipment* — A good diver shows up for a dive properly equipped for that specific dive. If it happens to be a cave dive, then he has the special tools for the job — such as a safety line and reel, underwater lights, and pony bottle. There are a few basic pieces of dive gear that indicate the mark of a good diver: a submersible pressure gauge, a buoyancy compensator, a reliable depth gauge, and an octopus rig.

A good diver also maintains and repairs his equipment on a regular basis, such as washing it at the end of a day's diving and doing a pre-check of all his gear at least two days prior to the next dive. This provides sufficient time to repair or replace damaged equipment.

*Underwater orientation* — A good diver knows exactly where he is during every moment of his dive, taking careful mental notes of underwater landmarks, current direction and velocity, and the time spent. He can always find his way back to the boat or beach and seldom surfaces more than 50 yards from his mark. A good diver also keeps a careful check on his tank pressure and makes his turnaround before the air is half gone. His goal for every dive is to return to the boat or beach with at least 300 psi remaining in the tank.

*Buddy contact* — "Never dive alone" is the cardinal rule of diving, but there is much more to the buddy system than being in the same ocean with another diver. A good diver maintains continuous contact with his buddy throughout the dive, either by visual or audio means. In some cases he has pre-arranged rendezvous points underwater, such as meeting his partner at the bottom of the anchor line before starting off across the ocean floor. Most important, a good diver has a definite plan of action in the event that he should become separated from his partner.

*Awareness* — A good diver develops a "sixth sense" about impending trouble. He does this by maintaining a constant vigilance on those environmental factors which can contribute to a bad scene, for example: increasing surf, increasing current, signs of fatigue in his dive buddy, heavy surge, a bad surface chop, or the onslaught of nitrogen narcosis. A good diver, like a good chess player, thinks ahead and when recognizing the signs of a problem, will generally avoid the situation by aborting the dive or revising the plan of action.

*Pre-dive judgment* — Knowing when not to dive is just as important as knowing how to dive. A good diver evaluates the dive site and water conditions long before he makes his entry. If the situation appears too hazardous because of storm surf, bad surge, or other weather conditions, he aborts the dive. The same holds true for his personal condition. If he discovers he has a bad cold, clogged sinuses, or just doesn't feel quite right, then he cancels himself out rather than burdening his fellow divers with the possibility of a rescue problem.

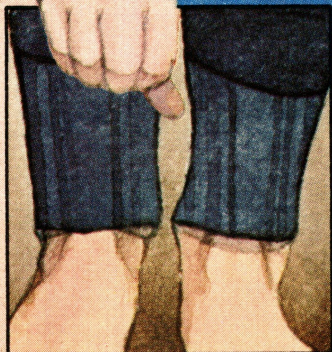
*Final definition* — If you had to sum it up in one sentence, I think the definition might be: "A good diver is a careful diver." One who *avoids* trouble rather than one who is always struggling out of a tight squeeze. The next time you're out on a dive, take a look around you and see if you can pick out the good divers. Better yet, check yourself out on this little test. >>>



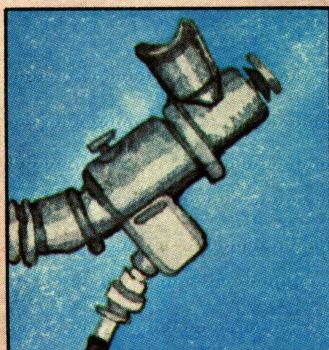
The best alternative  
a sport diver ever had.

# The New JetSuit

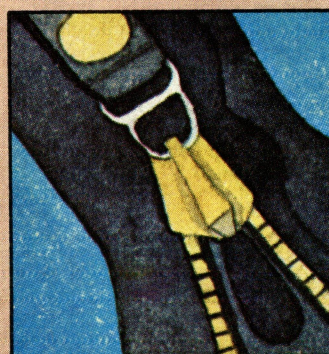
Dry, warm, form-fitting.



Neoprene-out ankles seal  
to legs or boots.



Optional automatic suit  
inflation valve.



Air-tight zipper.

You want to be dry,  
like a professional diver.

Right?

And warm.

Comfortable too.

That's asking a lot from any wetsuit.  
So get into the great new JetSuit.  
Made by the world's most experienced  
dive-suit manufacturer.

Of the finest Rubatex neoprene.  
With soft nylon both sides.

Zip. Fast and easy shoulder entry.  
Plus manual or automatic introduction  
of air into the suit.

And out again, at the touch of a button.  
Wrist and ankle seals.

That work with or without optional  
boots or gloves.

Attached up-or-down hood with  
patented neck seal.

Every feature of a professional dry suit.  
Except the price.

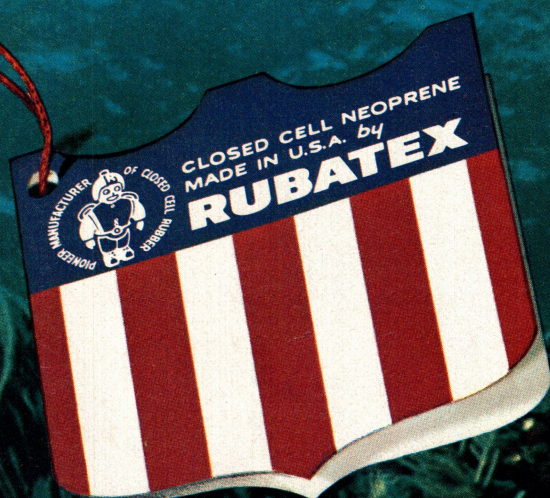
Available to certified sport divers only  
at local Poseidon dealers.



**Poseidon  
Systems, U.S.A.**  
A DIVISION OF  
**Parkway  
Fabricators, Inc.**  
241 Raritan Street,  
South Amboy, N.J. 08879



# Make diving a satisfying experience...



**RUBATEX** *closed cell* NEOPRENE  
a material for all diving suits.

- SPORTS DIVING OR PRO
- WET OR DRY SUITS
- SATISFYING QUALITY
- PLEASURABLE COMFORT
- IT'S FUN — IT'S PRACTICAL

Look for the hang tag — find Rubatex  
Neoprene. It's the original.



**RUBATEX**  
CORPORATION  
BEDFORD, VIRGINIA 24523

A SUBSIDIARY OF GREAT AMERICAN INDUSTRIES, INC.

WESTERN STATES: 14715 ANSON AVE., SANTA FE SPRINGS, CALIF. 90670, U.S.A.  
EUROPEAN ADDRESS: 5, RUE D'ARTOIS, PARIS 8E, FRANCE

## skin diver

### PETERSEN PUBLISHING COMPANY

R. E. PETERSEN	Chairman of the Board
F. R. WAINGROW	President
ROBERT E. BROWN	Sr. Vice President
DICK DAY	Sr. Vice President
JAMES WALSH	V.P., National Ad Director
ROBERT MacLEOD	Group Vice President
THOMAS J. SIATOS	Group Vice President
PHILIP E. TRIMBACH	V.P. Finance
WILLIAM PORTER	V.P. Circulation Director
JAMES J. KRENEK	V.P. Manufacturing
JACK THOMPSON	Assistant Director, Circulation
NIGEL P. HEATON	Director, Circulation Marketing
LOUIS ABBOTT	Director, Production
ARTHUR ZARIN	Director, Research
AL ISAACS	Director, Graphics
BOB D'OLIVO	Director, Photography
DAVID HOLZGANG	Director, Ad Adm. and Systems
MARIA COX	Manager, Data Processing Services

### SDM ADVERTISING REPRESENTATIVES

Jim Hall/Los Angeles Betsy Royal/New York  
Al Gomber/Chicago Lynn Ebro/Atlanta

### ADVERTISING OFFICES

#### ATLANTA

Dale Naef, Branch Mgr.  
615 Peachtree Street, N.E.  
Suite 414  
Atlanta, GA 30308  
(404) 876-0781

#### CHICAGO

Richard Holcomb, Branch Mgr.  
John Hancock Center  
875 N. Michigan Avenue  
Suite 3131  
Chicago, IL 60611  
(312) 222-1920

#### CLEVELAND

Dewey F. Patterson, Branch Mgr.  
Bond Court Building  
Suite 1001  
1300 East 9th Street  
Cleveland, OH 44114  
(216) 696-7900

#### DALLAS

Jeff Young, Branch Mgr.  
800 W. Airport Fwy.  
Suite 301  
Irving, TX 75061  
(214) 253-1157

#### DETROIT

Edward McLaughlin, Branch Mgr.  
333 W. Fort Street Building  
Suite 1800  
Detroit, MI 48226  
(313) 964-6680

#### NEW YORK

Robert Berg, Eastern Ad Director  
437 Madison Avenue  
New York, NY 10022  
(212) 935-9150

### PETERSEN ACTION GROUP

Robert Berg  
Eastern Director — New York

Richard Holcomb  
Midwestern Director — Chicago

Brent Sweet  
Western Director — Los Angeles

Edward McLaughlin — Detroit

Jeff Young — Dallas

Dewey F. Patterson — Cleveland

Dale Naef — Atlanta



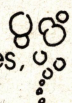


Dear Divers:

Thank you for helping make 1978 a most successful year for all of us at Sportsways.

Our concern for diver safety and comfort has been the motivating factor in continuing efforts to provide quality and reliability for over 20 years of manufacturing, sales, and service. From pioneering research that allowed us to design and patent the first single hose regulator and submersible tank pressure gauge to our role in promoting the common use of the "Octopus" second stage for added safety, Sportsways has been a leader in providing basic life support systems for almost every diving application, including complete hookah systems.

We are hard at work preparing our 1979 line, but I wanted to let all of our diving buddies know that all of us at Sportsways appreciate all you have done in buying and promoting Sportsways-Waterlung diving equipment.

Happy Bubbles, 

*Paul Chesney*

Paul Chesney  
Vice-President  
General Manager

Order your 1979 Catalog today. \$2

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_

Zip: \_\_\_\_\_

# SPORTSWAYS WATERLUNG



P.O. Box 2407 • 2050 Laura Avenue • Huntington Park, CA 90255 • (213) 587-4173



# Underwater Forum

## Basic Disasters

In response to your editorial, The Turning Point, in the June '78 issue of SKIN DIVER, I'd like to relate an experience that I had as a student.

In May, 1977, I signed up at a local dive shop to get my certification in time for an upcoming trip to Hawaii. On my first night of instruction, I put on a tank and swam around for as long as I had air in the tank. After that, I was asked if I wanted to take my first open-water dive two days later. I agreed, not knowing enough to know better. We dived Rancho Seco Lake in full wetsuits, which I had never had on before. I also had never had a BC on or any instructions in clearing my mask or equalizing the pressure in my ears. This first experience was OK, except that at about 15 feet my ears started to hurt due to the pressure.

My next lesson was a video tape session at the shop, where I learned that the person who took me on the open-water dive wasn't a certified instructor. The following "tape sessions" turned

out to be a lot of idle conversation and over-inflated scare type scuba diving stories. Pool sessions were held between tape sessions and were supervised by a 16 year old girl who didn't appear to be interested in scuba diving.

My first ocean dive was a disaster: I nearly drowned. The person in charge just got disgusted when I told him I was too tired to continue and said, "Swim you bastard, I can't help you now." He was the same uncertified gent from my first dive. I made it, but was totally unprepared.

My third dive went better but still was unattended by a certified instructor. Upon completion of this dive, I took the written test where students were blatantly copying each other's tests. I personally saw the supervisor giving the answers to students and the instructor, who was present for the first time, was changing answers for students. They graded my test, and I was told that I had passed. In the meantime, I was given a temporary certification signed by the certified instructor so that I could dive in Hawaii (which I did).

I returned to the dive shop to pick up my permanent certification when I returned from Hawaii, only to find out it was not ready. I returned to the shop three or four more times after that to be given the same answer. The fourth time, I was given another temporary certification. This was three months after the course completion.

I finally got disgusted and told the dive shop that I was going to report them to the Better Business Bureau if they didn't give me my certification. The shop owner told me he didn't care what I did (in not so polite terms). I then filed a complaint with the Better Business Bureau and they did absolutely nothing. Later I found out that they cannot do anything.

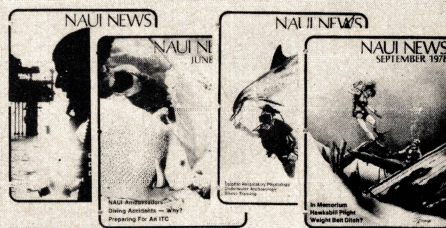
I wrote to a local TV station next, and they couldn't help. I didn't know who to go to so I contacted an attorney. He wrote the dive shop only to receive a reply from them that I hadn't successfully completed the written test!

I finally wrote to PADI. They wrote to the dive shop and the dive shop submitted a report on my attendance and written test. Since I attended all sessions and passed the test, I must assume the report was false. PADI wrote me and told me they were not going to take further action. I again wrote PADI and told them how disappointed I was in their inaction. They replied that I could appear before their ethics committee in Santa Ana and present my case. I took time off work and drove to Santa Ana and presented my case. I took with me written testimony from other students about the validity of my statements.

At this point PADI went to bat for me. The ethics committee contacted another dive instructor in Sacramento and asked him to enroll me in his basic scuba class at no charge.

## EQUAL OPPORTUNITY

NDA, the NAUI Diving Association is open to all divers regardless of their certification. NDA promotes safety through continuing education for divers and non divers. NDA fights in your behalf against discriminatory rules. NDA pioneers new types of programs and services for you. NDA helps to conserve the underwater resources. NDA invites you to join and help promote diving while you have fun too.



## NAUI DIVING ASSOCIATION

### The Divers Organization Features

- NAUI NEWS Subscription
- Publications Discounts
- Annual Convention
- Information on Legislation
- NAUI Log Book
- NDA Color Decal Free
- NDA Color Emblem Free
- Plastic Membership Card

**Join today - Send \$18.00 - to NDA, 785 Colton Ave., Colton, CA 92324**



# It's always a new beginning.

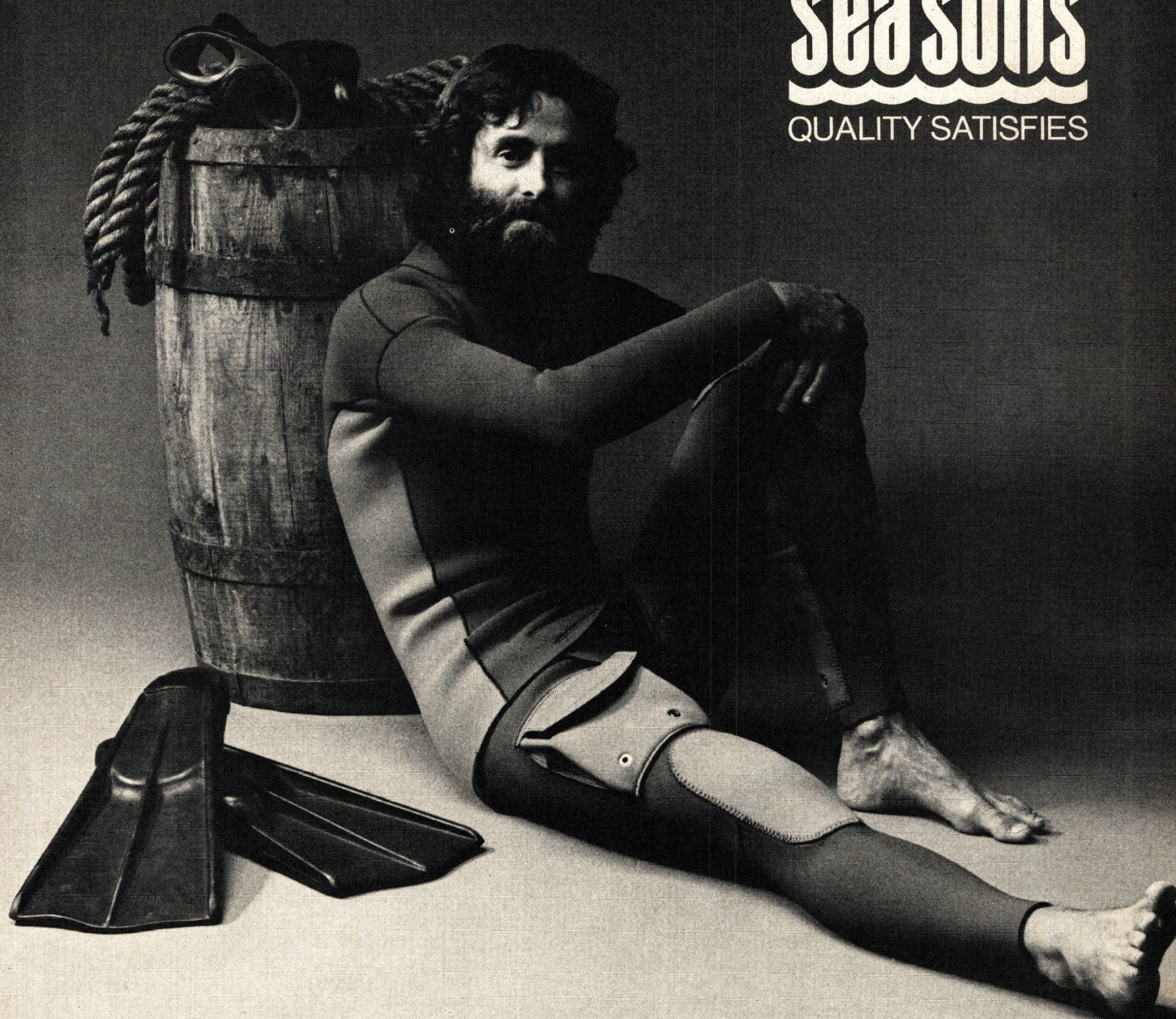
A good day, a good dive, a good life. They're all the same. New beginnings. Among the first pieces of gear you'll reach for to begin your dive will be your wet suit. It's basic. Why not begin with the best? • Sea Suits begin with quality. We think it's irreplaceable—fundamental. So begin with a Sea Suit. Every dive is a new beginning. With Sea Suits it's a good life. We know quality satisfies... it always has... it always will.



## SEA SUITS

837 W. 18th St., Box 245,  
Costa Mesa, CA 92627  
(714) 642-1912  
Dealer inquiries invited

**sea suits**  
QUALITY SATISFIES





## UNDERWATER FORUM

Let me tell you, the difference between a good instructor and a bad instructor is like the difference between night and day. The good instructor that PADI recommended is Jack Pabst from the Mother Lode Dive Shop . . .

It took me one year and two courses to finally get my certification. But I did, thanks to PADI and Jack Pabst.

THOMAS J. SORENSON  
SACRAMENTO, CA

### Daytona's Wild Bugging

Having just read *Come To Crawfish Country* (SDM July '78), I feel obliged to write the following description of the lobsters off Daytona Beach.

There are numerous reefs, rock piles, and wrecks located from 18 to 42 miles offshore where colonies of lobsters can be found. An average weight of two and one-half to three pounds makes for wild bugging! We find these big bugs at depths from 60 to 110 feet, and some of the best diving anywhere lies offshore.

I will mention that A. J. Bland, owner-operator of Atlantic Scuba Academy, myself, or Herb Ellis of Herb's Dive Shop, will be glad to furnish any information on trips, dive boats, reservations, etc.



For years all types of traps have been set in hopes of luring these delicious monsters, but very few have been taken by traps! With the amount of food and

the numerous hiding places available, they have remained a "come-and-get-me item!" I can recall a few up to six pounds being caught on rod and reel.

Diving offshore is not always a piece of cake though. For, unlike the Keys or the Bahamas, good visibility is only about eight to ten feet. But, there have been days when you could see the boat from 100 feet . . .

I have noticed that when lobster migrated from the Keys, no one seemed to know where they went. Well, come to Daytona Beach, and we'll show you!

CAPT. AL KEITH  
DAYTONA BEACH, FL

### By the Millions

In response to your editorials addressing the issue of "diver drop-out" . . . Granted, none of us avid divers wants people to leave our sport due to improper instruction or uncomfortable equipment, but I think the other extreme — that of a sport " . . . enjoyed by millions rather than a comparatively small knot of hard core enthusiasts. . . " (SDM Sept '78) is going a bit too far!

I, for one, enjoy the solitude of the underwater world and I would not want to see my favorite dive sites, already overcrowded, resemble a ski lift line. Nor would I want the delicate environment

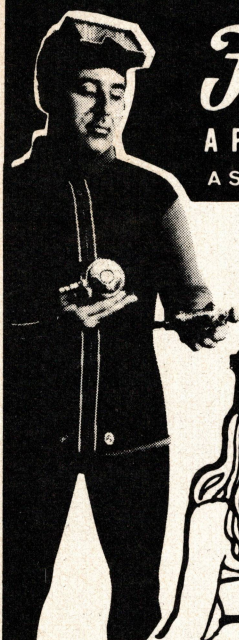
(Continued on Page 14)

BE A  
CERTIFIED...

## DIVING INSTRUCTOR EQUIPMENT REPAIR SPECIALIST

# Florida P.A.D.I. College

A PADI SANCTIONED INTERNATIONAL TRAINING FACILITY  
A SUBSIDIARY OF Underwater Educators, Inc.



Here is your opportunity to turn the exciting sport of skin diving into a rewarding career. Qualified people are needed in diving instruction, dive shop management and sales. The ten week resident training program at Florida P.A.D.I. College offers the skills, advanced techniques and thorough knowledge of equipment and its maintenance to qualify you for these challenging positions. Train in Florida with warm water and good weather — act NOW! **APPROVED FOR VETERANS TRAINING.**

Florida P.A.D.I. College 4593 ST. JOHNS AVENUE SD 11-78  
JACKSONVILLE, FL 32210 904/388-4689

Check course you are interested in:

- 10 WEEK FLORIDA  
P.A.D.I. COLLEGE COURSE:  
☐ Jan. 2-Mar. 9, 1979  
☐ Apr. 2-June 8, 1979  
7 DAY INSTRUCTOR COURSE:  
☐ Dec. 11-17, 1978  
☐ Mar. 12-18, 1979  
☐ Mar. 19-25, 1979  
4 DAY EQUIPMENT REPAIR COURSE:  
☐ Dec. 18-21, 1978  
☐ Mar. 26-29, 1979

Enclosed is \$1.00 for catalog

APPROVED FOR VETERANS TRAINING

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE \_\_\_\_\_

Licensed by the State Board of Independent  
Post Secondary Vocational Technical, Trade  
and Business Schools. Certificate Number 166

**Your future starts today at Florida P.A.D.I. College**



# Chronosport

The essence of time.



## QUARTZ WATCHES

### CHAMPAGNE SEA QUARTZ 30

#3407 on matching metal bracelet \$229.95

The deluxe divers' watch which looks and performs better than watches costing thousands of dollars, for people who cannot afford solid gold. The case of the Champagne Sea Quartz 30 is pressure-proof to 30 Atm., & plated with 20 microns of gold (twice as much as most good gold-plated watches), has a stainless-steel back, scratch-resistant crystal, one way turning bezel and a screwdown crown. The quartz day-date movement is guaranteed accurate to within one minute a year.  
**5 YEAR LIMITED GUARANTEE.**

#3406 also available with plastic strap \$179.95

### CHAMPAGNE MINI QUARTZ 30

#3907 on matching metal bracelet \$229.95

The richest, most beautiful divers' watch ever available for women — with the most accuracy and reliability. The Champagne Mini Quartz 30 has all of the features of the men's model (with calendar).

#3906 also available with plastic strap \$189.95

## WHY QUARTZ?

Quartz watches have fewer moving parts than self-winding watches and are therefore more rugged and reliable. The accuracy is many times greater than that of conventional watches.

## WHY CHRONOSPORT?

Reliability. Durability. Accuracy. Styling. Value. And a service department which is equipped to handle all needs within 48 hours in most cases. Not only during the guarantee period, but for the years to come. Why Chronosport? For these reasons and more. Chronosport...the essence of time.

Available at all leading dive shops or direct from Chronosport.  
Visa and Mastercharge orders welcomed.  
Telephone (203) 853-9593.



**Chronosport, Inc.** 119 Rowayton Avenue Rowayton, Conn. 06853

**CHAMPAGNE SEA QUARTZ 30**  
☐ I enclose check or money order  
☐ Please charge my ☐ Visa ☐ Mastercharge  
 Exp. date \_\_\_\_\_

**CHAMPAGNE MINI QUARTZ 30**  
☐ on steel bracelet ☐ on plastic strap  
☐ on steel bracelet ☐ on plastic strap

Name \_\_\_\_\_ Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_



# Seahorses

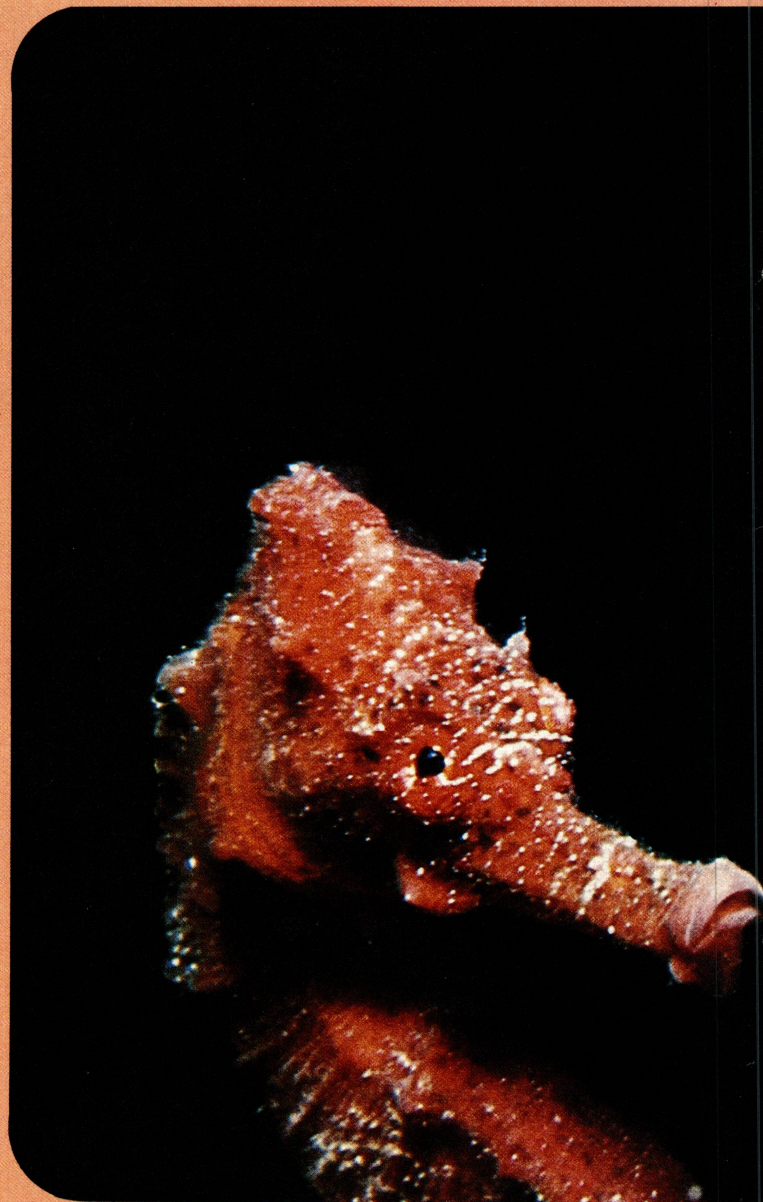
Corral a Colorful  
Moment of Delight

By Geri Murphy

There is a strange and unique little creature that has been wandering the earth's seas for millions of years. It is without a doubt the most extraordinary fish that exists in the animal kingdom. The seahorse, popular the world over, probably has the most bizarre anatomical structure ever created by nature. With a tail like a monkey's, a body that is armored like an insect's, and a head resembling a horse's, it is no wonder that people are reluctant to believe that the seahorse does in fact exist. Despite this unlikely creature's odd physical structure, the seahorse has vertebrae, or a backbone, as well as fins and gills, thus equipping it with the essential make-up of a true fish.

Found in shallow, warm seas, the seahorse is a shy and timid animal that prefers to reside among eelgrass or in harbors and under piers. In the family Syngnathidae, which also includes pipefish, the seahorse is of the genus Hippocampus, which literally translated means "horse caterpillar." Appropriately named, the seahorse swims in a vertical, upright position, using its worm-like tail as an anchor.

Propulsion is achieved by a dorsal fin located above the base of the tail and pectoral fins located on each side of the head. Almost transparent and vibrating up to 35 times per



photographs by Geri Murphy



second, these tiny fins are hardly noticeable at first glance. They give the seahorse the appearance of gliding through the water without any visible means of locomotion. Thus, the seahorse is a poor swimmer (traveling about one foot per minute) and the prehensile tail is used to anchor its owner in a vertical position, preventing it from being swept away in a current. The tail is coiled around any slender, firm object, such as finger or tube coral, which serves as a hitching post.

Unlike any other fish in the sea, the seahorse possesses two skeletons — an internal skeleton and an external skeleton. The external skeleton acts as a shield of armor and is composed of interlocking plates.

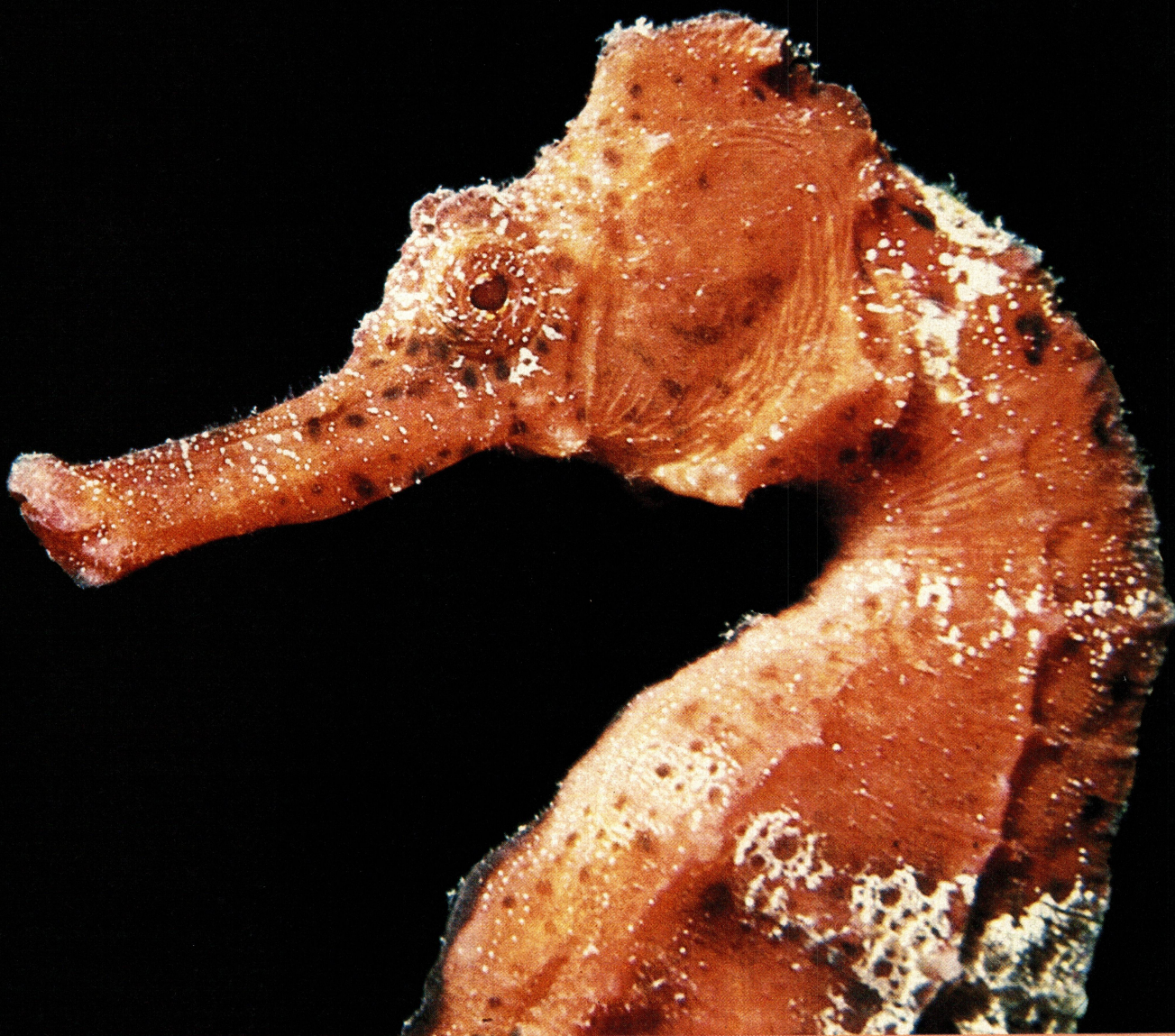
One of the most unusual parts of the seahorse's anatomy is the head, which is set at right angles to the body. The eyes are completely independent of each other, allowing one to search for food on the bottom and the other to watch for danger from above. The mouth is shaped like a long hollow tube and is as effective as a miniature vacuum cleaner. Composed of an upper and lower toothless jaw, this tube mouth is capable of sucking in food at lightning speed. Living on a diet of minute crustaceans, the seahorse seeks shrimp and fish eggs commonly found in shallow waters. Strangely

enough, it has no teeth or gill-rakers and no stomach. Digestion is handled by a simple alimentary canal.

Seahorses range in size from less than one inch to over six inches. The dwarf seahorse is one of the smallest and the longsnout seahorse is one of the largest. Although it wears a coat of armor, larger sea creatures such as the sargassumfish, rays and skates gobble it up whole without regard to its unsavory appearance. But Nature has given the seahorse an effective defense: It has the chameleon-like ability to match surrounding background colors.

The method of reproduction among seahorses is as unusual as its strange physical appearance, for it is the male who must bear the young. After the female deposits her eggs in the male's brood pouch for fertilization and incubation, she leaves. The male then becomes mother and father, and 40 to 50 days later gives birth. Anywhere from 50 to 250 live, tiny replicas are born which measure one-quarter inch or less.

The seahorse is an intriguing fish — a rare find for a diver. Dressed in a colorful coat to match the sponge on which it is anchored, it eludes the detection of even the sharpest eye. For the lucky diver who finds one of these noble creatures underwater, it is a moment of delight. >





# L' Aventure Cousteau

Join with Captain Jacques Cousteau, his son Philippe, divers and scientists aboard *Calypso* in a two-hour slide/film lecture presentation. Dive the dynamic Mediterranean! Celebrate dolphins and whales! Share a three-dimensional philosophy of our fragile water planet.



Produced and Narrated by Bill McDonald

## THE COUSTEAU SOCIETY



777 Third Avenue  
New York, N. Y. 10017



Exclusively Represented by:

Lordly & Dame, Inc.  
51 Church Street  
Boston, Ma 02116  
(617) 482-3593



**A superb 1979 calendar**, presenting 13 splendid underwater  $10\frac{1}{2} \times 10\frac{1}{2}$  full-color photographs, suitable for framing, by award-winning photographer, Feodor Pitcairn.

These magnificent scenes with accompanying descriptions convey the wonder and beauty of a living reef system.

The perfect gift for anyone who loves the ocean and its inhabitants.

©FeoPhoto Inc., 1978

FeoPhoto Inc.  
Jenkintown Plaza — Sixth Floor  
Jenkintown, PA 19046

Please send me \_\_\_\_\_ calendar(s) at \$6.95 each.  
(Pa. residents add 6% sales tax; foreign orders add \$1.50)

☐ Check or money order enclosed

Name \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

## UNDERWATER FORUM

(Continued from Page 10)

of reefs and freshwater sites injured by sheer numbers of people.

As for diving becoming a competitive sport, a statement I make to my students (in emphasizing safety and staying within personal limits) is "diving is not a competitive sport!" If an athlete finds little opportunity for personal challenge with all of the vast areas to explore in the underwater world, then I say he has not even attempted to plumb the depths of his own courage or stamina. I have yet to meet a truly avid diver who is jaded with the sport.

I do agree that diving could lend itself to more press and television coverage, but it does not need to be in the form of "sport spectaculars." Diving is not a typical sport and perhaps it does require the medium of a TV special to explain its peculiar mystery and fascination.

Let us struggle to attain an identity for diving as a safe, enjoyable, and unusual sport. But please, let's not push for millions to participate in diving merely because a fierce advertising campaign has enticed them to take the plunge.

NANCY A. WODKA

NAUI #4905

McLEAN, VA

## Cayman Revisited

For the third time in six years my dive club traveled to Grand Cayman Island for its annual warm water dive trip. Dive facilities grow better and guided dive boats more numerous each time. We were please to find that Clint Ebanks, formerly with Bob Soto and Surfside, now has his own boat, the *Queen Angel*. The new craft was built for diving and Clint is top notch for both safety and knowledge of the area. He is highly respected among local dive pros and keeps his passenger load to a safe and comfortable limit. The Cayman Islanders are among the world's most hospitable people, exuding a warmth and friendliness that is unmistakably genuine. It was like being welcomed home.

The one sad note was to see the decay both in facilities and quality of service that appear to be overtaking the Holiday Inn. The leaky plumbing, slow service in the dining room, non-functioning elevators and ice machines might all have been tolerable had it not been for the practiced and deliberate rudeness of the front desk staff. It was made repeatedly clear that, since we had followed their program of 100 percent prepayment on a dive package, our group of 21 guests was not to expect even the simplest of courtesies. As gratuities were automatically added to each check, no one was





# TRADE SHOW

## 5 IVE REASONS WHY EVERY DIVE STORE OWNER SHOULD ATTEND THE 1979 DEMA TRADE SHOW:

- 1 Your only chance to see all the new products of all the manufacturers at once!
- 2 A dealer exclusive, this will be the largest show of its kind ever held!
- 3 More repair clinics, training seminars and film premieres than ever before!
- 4 Review all the new instructional programs from the training agencies.
- 5 A chance to relax and enjoy colorful New Orleans.

The 1979 DEMA Trade Show will be held January 20 - 23 at the Grand Hotel in New Orleans. Over 165 booths will be displaying the latest in new equipment from around the world — it is bigger, better and more exciting than any previous DEMA Trade Show. By the pre-registration coupon below you can avoid the long lines to get into the show on the first day. Don't wait, act now and get ready for the time of your life.

PLEASE FILL OUT AND RETURN NO LATER THAN DECEMBER 15, 1978. Registrations received after that date may be picked up at the door.

STORE OWNER NAME: \_\_\_\_\_

STORE NAME: \_\_\_\_\_

STREET ADDRESS: \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_ PHONE \_\_\_\_\_

Name of your main full line manufacturer: \_\_\_\_\_

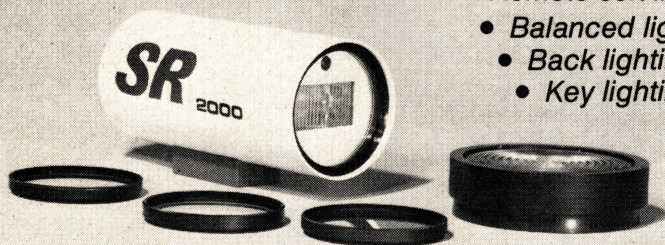
Registration fee: \$10.00 per person. Note: Admittance to the 1979 DEMA Trade Show is restricted to bonafide diving retailers and their sponsored guests. DEMA reserves the right to refund the registration fee to anyone not meeting this criteria.

Please attach your business card to this coupon



# CONTROL YOUR COLOR WITH THE SR 2000 SLAVE

## HERE'S HOW!



- Color correction with filters
- Fill light for shadow detail
- Wider angle of coverage
- Specific subject interest
- Remote soft lighting
- Balanced lighting
- Back lighting
- Key lighting

TO GIVE YOUR PICTURES THE PROFESSIONAL LOOK  
YOU SHOULD ADD THE SR 2000 CORDLESS SLAVE TO  
YOUR SYSTEM.

WRITE TO: **SONIC RESEARCH**  
5111 Santa Fe St., Suite H San Diego, CA 92109

## UNDERWATER FORUM

concerned with providing either service or a polite answer. The final straw came when we were "invited" to settle our personal bills the night before departure but were denied receipts for cash payments. It is indeed unfortunate to see what was once the best accommodation on the island drive off divers in such an inhospitable manner.

We still feel Grand Cayman is an excellent spot for a dive trip and recommend it to novice or experienced divers. The waters, the people and the expert guides make it all worthwhile. Most resorts seem to welcome and appreciate the divers who are thronging to this Caribbean dive mecca.

WILLIAM A. KLEIN  
BASKING RIDGE, NJ

## Florida Springs

I am writing to voice a complaint on behalf of conscientious divers here in Florida. The problem is with people who travel long distances to dive Florida's springs, and proceed to litter up the surrounding environment. On a recent visit there, our dive group arrived to find campers from several out-of-state locations camped directly by the spring. Adjacent to these sites were large piles of garbage. Later that afternoon, these "divers" packed up and left without collecting the mess. It is disgusting to have to clean up and haul someone else's garbage. On this occasion, we hauled out three large bags of beer bottles and unconsumed food. As a result of this situation, a few local divers are carrying trash bags as part of their dive gear.

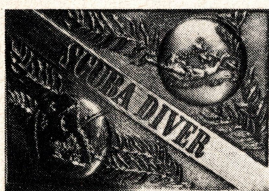
A second problem: many people who dive Florida springs are unaware of the dangers involved. The distinction between spring or grotto diving and cave diving is something that all divers should be acutely aware of. Many visiting divers enter these springs without familiarizing themselves with the complexities of such a diving environment. Too often, people from distant locations die in these springs . . .

The sum total of these two problems is that spring diving is fast becoming a lost pleasure for divers everywhere. Land owners who are kind enough to allow access to springs are forced to close them because of liability problems, or they simply tire of inconsiderate slobos.

Spring diving can be maintained and enjoyed by divers for years to come, but only if people are willing to accept the responsibilities that go with it. If you are not willing to accept these responsibilities, and be considerate, safe divers, then stay at home.

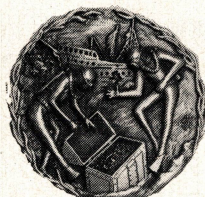
TOM W. TARGETT  
GAINSVILLE, FL

# DIVE ACCESSORIES



### Original Scuba (Sq. Design)

Buckle Brass (\$ 6.95)  
#707-B Gold (\$29.95)  
Patch (\$3.50)  
Medallion Brass (\$ 5.95)  
#707-m/k Gold (\$12.95)



### Wreck Design

Buckle Brass (\$ 6.95)  
#709-B Gold (\$29.95)  
Patch (\$3.50)  
Medallion Brass (\$ 5.95)  
#709-m/k Gold (\$12.95)



### Scuba Center

Buckle Brass (\$ 6.95)  
#708-B Gold (\$29.95)  
Patch (\$3.50)  
Medallion Brass (\$ 5.95)  
#708-m/k Gold (\$12.95)



- Medallion orders receive a free key chain and gift box.
- Any order over \$17.00 receives a free patch.
- Belts available in black or brown — State size and color — \$5.00 each.

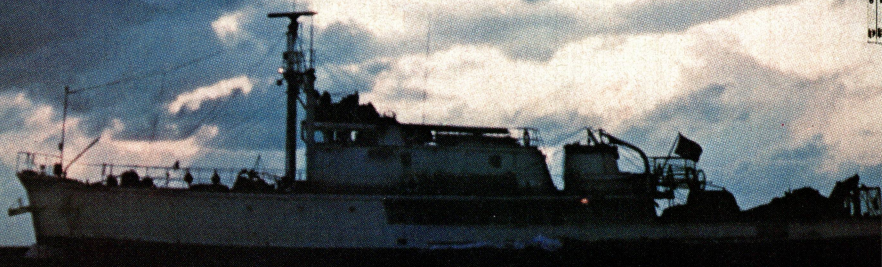
- All products shipped UPS — Allow 15 days for delivery.
- Shop early for Christmas.
- Dealer inquiries invited.
- Buckles and medallions custom made to order for clubs, companies and organizations.

## CREATIVE METALS CO.

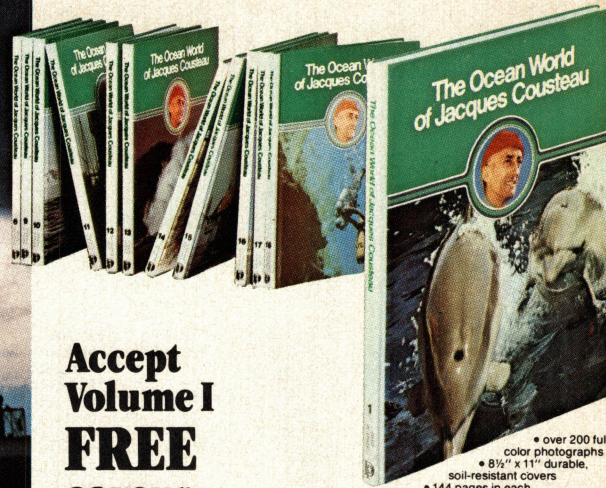
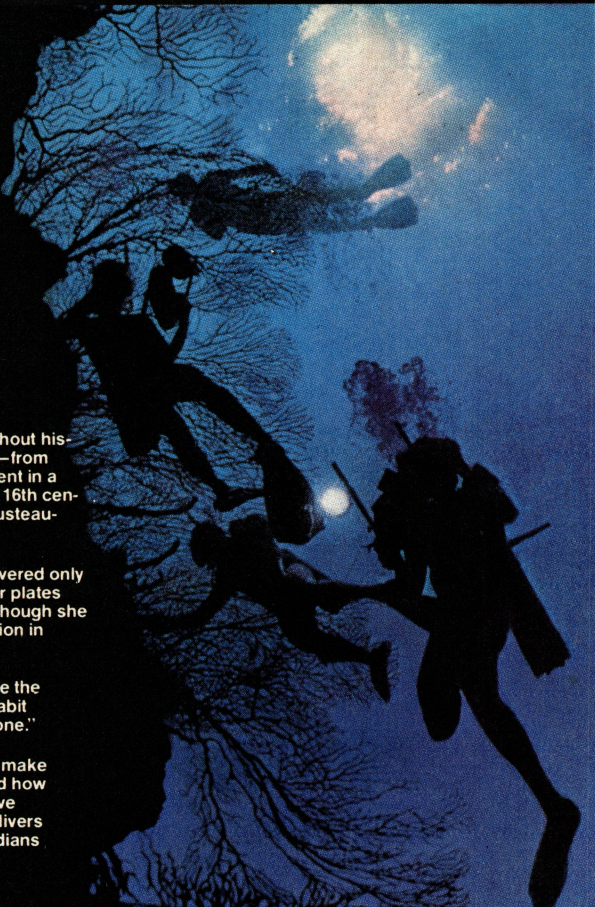
13 Roosevelt Lake In The Hills, Illinois 60102  
PHONES: (312) 658-8260 or (312) 658-7070



# Sail with Calypso! Dive with Cousteau!



- See man's attempts throughout history to breathe under water—from Alexander the Great's descent in a wooden bucket...to fanciful 16th century diving bells...to the Cousteau-Gagnan aqualung.
- Learn why divers have recovered only a perfume bottle and 4 silver plates from the "Andrea Doria," although she reportedly sank with \$4 million in cash and jewels.
- Descend 32,000 feet and see the bizarre forms of life that inhabit the dark and frigid "hadal zone."
- Discover what unique traits make women superior divers—and how their natural advantages have been exploited by the ama divers of Japan and the Yahgen Indians of Tierra del Fuego.



## Accept Volume I **FREE** as your introduction to **THE OCEAN WORLD OF JACQUES COUSTEAU**

The world's most famous undersea explorer, Jacques Cousteau, invites you to journey with him into waters no one has ever before dared to enter, and dive to depths once thought impossible. The skipper whose Aqualung, Diving Saucers, and Conshells have turned men into oceanauts shows you the once-secret world these inventions have unlocked, a world teeming with life, challenge and excitement—beautiful and bizarre marine creatures...incredible undersea formations and plant life...wrecks almost totally picked clean of their treasures.

In *The Ocean World of Jacques Cousteau*, you'll be captivated by the same intriguing blend of knowledge, personal warmth, and narrative skill—the same bold and original views that make his films and television specials so memorable. Filled with thousands of spectacular color photographs and scientific discoveries, these volumes are the extraordinary results of Captain Cousteau's thousands of diving hours, and years of undersea detective work.

In your free introductory volume, you'll experience all the excitement of the world Cousteau knows and loves best—from the primitive nautilus, unchanged after millions of years...to the complex and intelligent dolphin, a creature we're already communicating with in astonishing ways. You'll follow the clues that reveal our past—and learn how the myriad wonders of the sea are the key to our future survival.

Simply mail the coupon and you'll soon be enjoying your free introduction to *The Ocean World of Jacques Cousteau*.

### "Our children need the ocean to survive"

A message to you from  
Jacques Cousteau...

If the Oceans of Earth should die—it would be the final catastrophe in the story of man and of all life on this planet...maybe fifty years later the last man on earth would take his own last breath. Why imagine such a nightmare about the subject I love most? Because the Ocean can die—and we must make sure that it doesn't. Man exists only because Earth is a "water planet"—liquid water being probably as rare in the universe as life, perhaps even synonymous with life. The Ocean is life. This is why we must change our attitude toward the Ocean. We must regard it as no longer a mystery, a menace, a dark and sinister abode of secrets and wonders. Instead we want to explore how it moves and breathes, how it experiences dramas and seasons, how it nourishes its hosts of living things, how it harmonizes the physical and biological rhythms of the whole earth, what hurts it and what feeds it—not least of all, what are its stories.



The Ocean World of Jacques Cousteau, Dept. ER  
Sherman Turnpike, Danbury, Connecticut 06816

This order form entitles you to receive—as a FREE GIFT—Volume 1 of the 21-volume illustrated series, *The Ocean World of Jacques Cousteau*, with no obligation to buy anything. As a subscriber you will be notified in advance of all future shipments and you may reject any shipment or cancel your subscription simply by notifying us before the shipment date indicated on the invoice accompanying your advance shipment notice. (This procedure is designed to provide time for mail delivery and computer processing.) Also, if not completely delighted with any volume after FREE examination in your home, you may return it at our expense and owe nothing.

If we do not hear from you after you have received your FREE volume, we will send you Volume 2 in six weeks, then Volume 3 six weeks after Volume 2, and all the remaining volumes six weeks after that. Those volumes you decide to keep will become a permanent part of your home library, and you will be billed for only 1 volume per month until they are paid for at the amazingly low price of only \$6.95 per volume plus shipping and handling.

As a subscriber you will also be entitled to receive, for FREE examination, any annuals that are issued. You may purchase only those you wish to own.

Remember, you are free to cancel at any time after taking as many or as few volumes as you like—even none at all if you so choose. Volume 1 is yours to keep ABSOLUTELY FREE no matter what you decide.

Name \_\_\_\_\_

Address \_\_\_\_\_ Apt. = \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Signature \_\_\_\_\_

If under 21, please have parent or guardian sign. Available in Canada. Shipment and services from Canada

97297



# SOME STORES ARE MORE INVOLVED

## ALABAMA

- 5\* Gulf Coast Divers Supply  
708 Oak Circle Drive West  
Mobile, AL 36609

## ARKANSAS

- 4\* Scuba Services Co.  
1304 N. 6th Terrace  
Barling, AR 72923

## CALIFORNIA

- 5\* Aqua Tech Dive Center  
1717 Yosemite Blvd.  
Modesto, CA 95351
- 5\* Aqua-Ventures Diving School  
2172 Pickwick Drive  
Camarillo, CA 93010
- 5\* Cassotta Diving Instr.  
4930 Pacific St.  
Rocklin, CA 95677
- 5\* Divers Den, Inc.  
22 Anacapa St.  
Santa Barbara, CA 93101
- 5\* Monterey Dive Center  
763 Lighthouse Avenue  
Monterey, CA 93940

## CONNECTICUT

- 5\* Innerspace Diving Supply  
598 Center St.  
Manchester, CT 06040

## FLORIDA

- 5\* Divers Den South  
12614 N. Kendall Drive  
Miami, FL 33186
- 5\* Divers Unlimited  
4231 Hollywood Blvd.  
Hollywood, FL 33021
- 5\* Florida P.A.D.I. College  
4593 St. Johns Avenue  
Jacksonville, FL 32210
- 5\* Florida P.A.D.I. College  
13637 Beach Boulevard  
Jacksonville, FL 32224
- 5\* Lauderdale Diver  
1334 S.E. 17th St.  
Ft. Lauderdale, FL 33316
- 5\* Prof. Diving Schools of Florida  
210 N. Federal Highway  
Deerfield Beach, FL 33441
- 5\* Prof. Diving Schools of Florida  
1540 No. Federal Highway  
Pompano Beach, FL 33062
- 3\* Pisces Divers Inc.  
14328 Biscayne Blvd.  
N. Miami Beach, FL 33181

## GEORGIA

- 5\* Diving Locker  
AITS Shopping Center  
1490 Baxter St.  
Athens, GA 30601
- 5\* Sub-Aqua Specialties  
2236 Bemis Road  
Valdosta, GA 31601
- 4\* Garrard Pro Divers  
2552 #7 So. Cobb Dr.  
Smyrna, GA 30080

## ILLINOIS

- 3\* Midwest Diving Specialists  
203 S. Linden  
Normal, IL 61761

## INDIANA

- 5\* Divers Supply Co. Inc.  
3315 N. Illinois Street  
Indianapolis, IN 46208
- 3\* International School of Scuba Diving  
218 E. Main  
Plainfield, IN 46168

## MARYLAND

- 5\* Dynamo, Inc.  
8906 Rhode Island Avenue  
College Park, MD 20740

## NEW HAMPSHIRE

- 5\* La Porte's Skindiving Shop  
Box 53, Route 103  
Newbury, NH 03255

## NEW YORK

- 5\* Central Skin Divers  
2608 Merrick Road  
Bellmore, NY 11710
- 5\* Niagara Scuba Sports  
2048 Niagara Street  
Buffalo, NY 14207
- 5\* Pisces Scuba Diving, Ltd.  
783 Fairport Road  
E. Rochester, NY 14445

## NORTH CAROLINA

- 3\* Scuba World, Inc.  
4732 South Boulevard  
Charlotte, NC 28210

## OHIO

- 5\* Diver's Paradise  
2511 North Reynolds Road  
Toledo, OH 43615
- 3\* Scuba West Diving Schools  
17021 Lorain Ave.  
Cleveland, OH 44111
- 3\* Treasure Cove Scuba  
1037 Youngstown Road, Rt. 22  
Niles, OH 44446

## OREGON

- 5\* Oregon Diving School, Inc.  
1790 Center N.E.  
Salem, OR 97301
- 5\* Oregon Diving School, Inc.  
1677 Coburg Road  
Eugene, OR 97401

## SOUTH CAROLINA

- 5\* Underwater Works Limited  
1023 Bush River Road #7  
Columbia, SC 29210

## TENNESSEE

- 5\* Currant Interprises, Inc.  
600 Magnolia Ave. NE  
Knoxville, TN 37917

## TEXAS

- 5\* El Paso Divers Supply  
541 Stonebluff Road  
El Paso, TX 79912
- 5\* J. Rich Sport's Ltd., Inc.  
420 Northcross Mall  
Austin, TX 78757
- 5\* Southwest Scuba Divers  
1665 Lomaland Dr.  
El Paso, TX 79935

## VIRGINIA

- 3\* Aqua Lung Diving Center  
9601 Jefferson Avenue  
Newport News, VA 23601
- 3\* Aqua Lung Diving Center  
805 W. Little Creek Rd.  
Norfolk, VA 23505

## WASHINGTON

- 4\* Mike's Diving Center  
Rt. 5 Box 916  
Shelton, WA 98584

## WISCONSIN

- 5\* The Deep End Scuba Training Ctr.  
131 South Main St.  
Fond du Lac, WI 54935
- 3\* West Bend Aqua Shop  
1829 N. Main Street  
West Bend, WI 53095

## AUSTRALIA

- 3\* Illawarra Aqua Centre  
312 Windang Rd.  
Windang N.S.W.  
Australia

## BAHAMAS

- 5\* Island Diver's Ltd.  
% Columbus Landings Services Co.  
P.O. Box 1492  
Ft. Lauderdale, FL 33302

## CANADA

- 4\* Canadian Scuba Diving School  
Woodside Shopping Centre  
211 Pleasant St.  
Dartmouth, N.S., Canada

## GUAM

- 5\* International Divers Association  
P.O. Box 6657  
Tamuning, Guam 96911

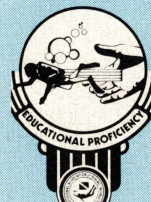
## PHILIPPINES

- 5\* Bunn's Philippines  
928 Pasay Road  
Makati, Riza., Philippines
- 5\* SEA US Philippines  
% Special Services  
Box 12 NAV STA Subic  
FPO San Francisco, CA 96651
- 4\* Aquaventure Philippines  
708 Aurora Blvd.  
Quezon City, Philippines 3008

## VIRGIN ISLANDS

- 5\* Virgin Islands Diving Schools  
P.O. Box 9707  
Charlotte Amalie, St. Thomas, V. I. 00801

Yes, there are differences among dive stores. A few select diving retailers around the world are so seriously committed to the ideals of Scuba Training and Service that trends for the entire sport diving industry are the offspring of their innovations and standards. We have learned to recognize this rare dedication; now you can as well. Look for the mark of the 5 Star — emblem of excellence for the diving adventure.



## EDUCATIONAL PROFICIENCY

This award means a dedication to Open Water Training with 5 open water dives and high standards of diver education. Also, the enjoyable continuing education courses you have looked for will be available.



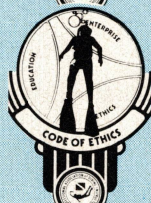
## PURE AIR

Of ultimate importance to your safety and well-being, this emblem shows that this dive store goes to the expense of being certain your air is pure by having a regular air analysis through the PADI Pure Air Program.



## SCUBA SERVICE

This important award tells you this retailer has been factory authorized to repair the gear sold, has the proper tools for the work, and that repairs are completed to the manufacturer's specifications.



## CODE OF ETHICS

Your assurance of fair and honest treatment. A national certification card is required for compressed air and rental of equipment, and evidence of a current internal inspection is required of cylinders to be filled.



## COMMUNITY INVOLVEMENT

Lets you know the retailer is active in the community and gives generously of time to neighborhood causes, that new and exciting means are actively sought for you to enjoy local and vacation diving, and that you will be kept informed of upcoming events through regular newsletters.

# PADI

5 STAR INTERNATIONAL TRAINING FACILITY

For a complete list of PADI  
Training Facilities contact:  
AL HORNSBY  
Training Facility Director

PADI Headquarters  
2064 N. Bush St.  
Santa Ana, CA 92706  
(714) 547-6996

NUMBER ONE IN DIVER EDUCATION



# SDM'S NATIONAL SCUBA EXAM

By Dennis Graver

## Category: Tank Valves

Divers tend to take tank valves for granted because they are fairly simple and reliable. There are some important considerations, though, which are not typically taught in basic courses and which can affect safety. Test your knowledge of tank valves by answering the following questions. The answers are on the next page.

1

The type of valve which contains a constant reserve is a:

- ☐ A. J valve
- ☐ B. K valve
- ☐ C. O valve
- ☐ D. R valve

2

All scuba tank valves are required to have:

- ☐ A. A reserve
- ☐ B. A burst disk
- ☐ C. A stem gauge
- ☐ D. Tapered threads

3

The purpose of a valve snorkel tube is to:

- ☐ A. Limit the flow of air from the tank
- ☐ B. Filter the air leaving the tank
- ☐ C. Prevent particles from entering the valve
- ☐ D. Absorb small amounts of moisture in the tank

4

If a standard scuba tank were knocked over and the valve sheared completely off, the tank would be likely to:

- ☐ A. Take off like a rocket
- ☐ B. Move slightly and hiss loudly
- ☐ C. Spin violently for several minutes
- ☐ D. Fail its next hydrostatic test

5

When your tank valve is difficult to operate, it means:

- ☐ A. The tank is full of air
- ☐ B. You should lubricate the valve
- ☐ C. The valve needs to be replaced
- ☐ D. The valve should be serviced

6

Before attaching the regulator to the tank valve, the valve should be opened momentarily to:

- ☐ A. Estimate the amount of air in the tank
- ☐ B. Smell the air to check quality
- ☐ C. Check the valve operability
- ☐ D. Clear any dirt or moisture from the valve

7

Special attention is periodically required for valves in aluminum tanks because:

- ☐ A. The valve can become seized to the tank
- ☐ B. They are more easily damaged than steel tank valves
- ☐ C. They contain a filter screen which must be cleaned
- ☐ D. Tank pressure causes the valve to slowly loosen

8

When turning on the air with a regulator attached, you should:

- ☐ A. Turn the valve on quickly and open it one turn or less
- ☐ B. Turn the valve on slowly and open it one turn or less
- ☐ C. Turn the valve on quickly and open it all the way
- ☐ D. Turn the valve on slowly and open all the way

9

The lever on reserve valves should be:

- ☐ A. Up at the start of a dive and down for tank filling
- ☐ B. Up at the start of a dive and up for tank filling
- ☐ C. Down at the start of a dive and down for tank filling
- ☐ D. Down at the start of a dive and up tank filling

10

A tank valve from an aluminum tank can be used in a steel tank if:

- ☐ A. The threads match
- ☐ B. The burst disk is changed
- ☐ C. The valve is serviced first
- ☐ D. All of the above are done



# SDM'S NATIONAL SCUBA EXAM

1

**A. J valve.** A K valve is a simple on-off valve, an R valve is an obsolete valve, and there is no such thing as an O valve. A J valve contains a spring-loaded reserve which operates at 300 to 500 psi.

2

**B. A burst disc.** All valves are equipped with a plug or disc designed to rupture before the bursting pressure of the tank would be reached due to overfilling or overheating. Air escaping through a ruptured disc is quite loud, but not dangerous. The discs are easily replaced, but should be worked on only by professional repairmen.

3

**C. Prevent particles from entering the valve.** A tube extends from the bottom of a valve a few inches into the tank. This keeps loose particles and water from entering the valve when the tank is inverted and possibly causing damage to the valve or regulator.

4

**B. Move slightly and hiss loudly.** The most likely thing to occur when a tank is knocked over is valve damage. The horror stories of tanks rocketing through the air are about commercial gas storage bottles, not scuba tanks. Care should still be taken, but the danger is overemphasized.

5

**D. The valve should be serviced.** It is hazardous to lubricate your own valve, and the valve will be damaged if you continue to use it when its operation is difficult. Valve service is not expensive, but replacement is.

6

**D. Clear any dirt or moisture from the valve.** Anything in the valve opening would be forced into the regulator by high pressure. A simple, short blast of air clears away any foreign matter.

7

**A. The valve can become seized to the tank.** The metal of the valve is not the same as the tank metal, so electrolysis can occur and cause the valve to become seized. A special lubricant needs to be applied to the valve periodically.

8

**D. Turn the air on slowly and open the valve all the way.** Turning the air on very slowly is easier on your regulator than applying high pressure quickly. Opening the valve all the way allows maximum air flow through the valve. Remember to turn the valve back about one-quarter turn after opening it all the way.

9

**A. Up at the start of a dive and down for tank filling.** When the lever is in the up position, a spring is pushing a reserve valve closed while tank pressure opposes it. External pressure drives the valve closed tightly and can damage the valve seat. In the down position, the reserve valve is held open manually and permits full air flow either in or out of the tank.

10

**D. All of the above are done.** The valve needs to be cleaned, inspected, and lubricated. Additionally, the burst disc for an aluminum tank is rated at a higher pressure than the disc for a steel tank and must be replaced for safety.

*These questions tested information from the basic scuba level through the advanced diver level. An experienced diver should not have missed more than two or three questions. I hope the readers will have a little more concern for their tank valves as a result of this exam, for they are important in the scuba system. When was the last time your valve was serviced?*



# IT'S YOUR FUTURE

Don't be mislead by commercial diving schools who claim to be best or #1 just because they have certain equipment or have been in operation X years. Anyone can make such claims, but, proving it's another matter. At D.I.T. we don't make claims. We let our reputation do that. Check us out. Compare our credentials to the others. Judge for yourself who's best qualified to train you right. It's your decision and your future.

Ten years ago D.I.T. started with no approval or recognition from any local, state or federal agency. Today we are approved by virtually all agencies who are involved in vocational education. D.I.T. is accredited by the accrediting commission of The National Association of Trade and Technical Schools. Other approvals and memberships include . . .

**Approved by:**

Department of Health, Education & Welfare (HEW)  
The Council on Post Secondary Accreditation (COPA)  
Veterans Administration  
Social Security Administration  
Comprehensive Employment & Training Act (CETA)  
Department of Vocational Rehabilitation (DVR)  
Bureau of Indian Affairs (BIA)  
Washington State Commission for Vocational  
Education for Veterans Training

**Member of:**

National Association of Trade and Technical Schools  
Association of Commercial Diver Education (ACDE)  
Association of Diving Contractors (ADC)  
Institute of Diving (IOD)  
Washington Association of Trade and  
Technical Schools (WATTS)  
Chamber of Commerce of the United States  
Better Business Bureau (BBB)

D.I.T. was founded and is staffed by men who know how to train you to work efficiently in and around the sea. Our record of training excellence allows employers to hire our graduates with confidence.

Send \$2.00 for our catalog. See how to enroll in a highly sophisticated six-month professional deep sea diving course which covers all facets of the industry. Our catalog contains full disclosures including course outline, employment statistics, instructor qualifications, tuition refund policy, standards of progress, financial assistance available, etc. An eligible institution for student loans and grants.

**D.I.T.**   
**DIVERS INSTITUTE OF TECHNOLOGY, INC.**

1133 N.W. 45TH ST. • DEPT. SDM 9  
P.O. BOX 70312 • SEATTLE, WA. 98107  
(206) 783-5542





# NEW!

Available direct for the first time from Sub Aquatics Press — the famous **Edwin Janss Undersea Calendar**. Widely acclaimed by divers and lovers of the sea this calendar is a colorful reminder of the fascinating world that lies beneath the surface of our oceans. Mr. Janss's photographs reveal a kind of loving eye that captures the magnificent artistry of undersea life.



**A perfect Christmas gift  
for the divers in your life.  
Order now and avoid the holiday rush!**

These famous ocean lovers said the following about the 1979 Undersea Life Calendar:

Dr. Sylvia Earle  
Curator of Phycology, California  
Academy of Sciences, San Francisco. "The 1979 Undersea Life Calendar with photography by Edwin Janss and text by Dr. John McCosker is truly beautiful, artistic and unusual. It will be a delight to own and the subject and composition of the photographs are scientifically and aesthetically outstanding. You may well wish to frame all of them when the year is over."

Dr. Robert J. Lavenberg  
Curator of Ichthyology, Los Angeles  
Museum of Natural History. "The Sea Must Live is yet another Janss-McCosker calendar that continues the tradition of man's concern with oceanic life through the reality of underwater photography. Artfully captured in their habitats by the skills of Ed Janss, these unique forms of marine plants and animals are emblazoned with the beauty of life. I recommend this calendar to everyone so that they may share in the stillness of the images and let the sea live."

Dr. Leighton Taylor  
Director, Waikiki Aquarium, Honolulu, Hawaii. "Ed Janss combs the seas with the eyes of an artist and the rationality of a biologist to produce photographs that are at once works of art and scientific records. The succinct and authoritative sub-titles by John McCosker augment the scientific dimension, but the beauty and visual quality need no comment beyond the eyes of the beholder."

☐ Please send me the 1979 Undersea Life Calendar.  
I have enclosed \$5.95 for each order.

SD 1178

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

**Sub-Aquatics Press**

**530 6th St.**

**Hermosa Beach, CA 90254**

**California Residents please include 6% state sales tax.**



# Shows 'n Events

November 4

16th Annual Underwater Film Festival, Bovard Auditorium, Univ. of Southern California (Contact: Underwater Photographic Society, PO Box 7088, Van Nuys CA 91409)

November 4

Seamark '78 Annual Fund Raising Benefit for the Cotting School for Handicapped Children, New England Aquarium, Boston, MA, 7:30 p.m. (Contact: Cotting School for Handicapped Children, 241 St. Botolph St., Boston, MA 02115. (617) 536-9632)

November 4-5

2nd Annual Aqua Space 78, sponsored by Aquatic Exploration and Research Associates, Math Bldg., Univ. of Windsor, Windsor, Ont., Canada (Contact: Jocelyn Goodwin, 3147 California Ave., Windsor, Ont., Canada N9E 3K5)

December 30-31

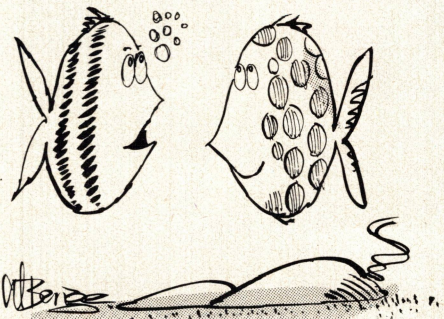
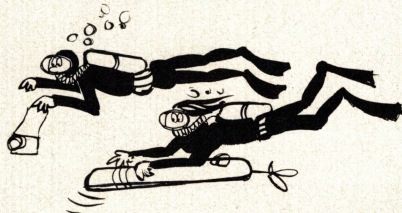
10th National Speleological Society Cave Diving Safety Workshop, Branford Women's Club, Branford, FL (Contact: Dr. John Zumrick, 2114 NW 55th Blvd., Apt. 12-A, Gainesville, FL 32601)

January 20

Entry deadline Illinois Council photo contest (Contact: Jan Weber, 1211 Market St., DeKalb, IL 60115)

March 3

Sea Rovers '79 / Boston Sea Rovers 25th Annual U/W Clinic, Boston University & John Hancock Hall (Contact: Bunky Hodge, 174 Beech St., Rockland, MA 02370 (617)-878-8710)



"You could write a book about the different species of skin divers."

For **YOUR** deep-sea diving training...

## Choose the School that has earned the highest marks from its students!

At The Coastal School of Deep Sea Diving, we ask all students in every class to tell us why they chose our school. The "Report Card" below summarizes a few of the reasons most often given:

REPORT CARD		
"A-plus" reasons why students choose Coastal		
SUBJECT	DESCRIPTION	GRADE
LOWEST COST	\$1295 for 11½ weeks. The lowest in the industry, and most for your dollar.	A +
HIGHEST SAFETY	No fatalities or major accidents in school's history.	A +
MOST EXPERIENCE	Now in 29th year. More than 4,500 graduates	A +
BEST EQUIPMENT	Training in more kinds of helmets and other equipment.	A +
IDEAL LOCATION	San Francisco Bay Area. No snow. All-year schedule.	A +

Avoid imitators!  
No other school is a  
branch or affiliate.

## CHOOSE COASTAL! #1



Get the full story. Send \$2.00 for a copy of "Your Future in Deep Sea Diving." No obligation.

The Coastal School of Deep Sea Diving  
320 - 29th Avenue  
Oakland, CA 94601

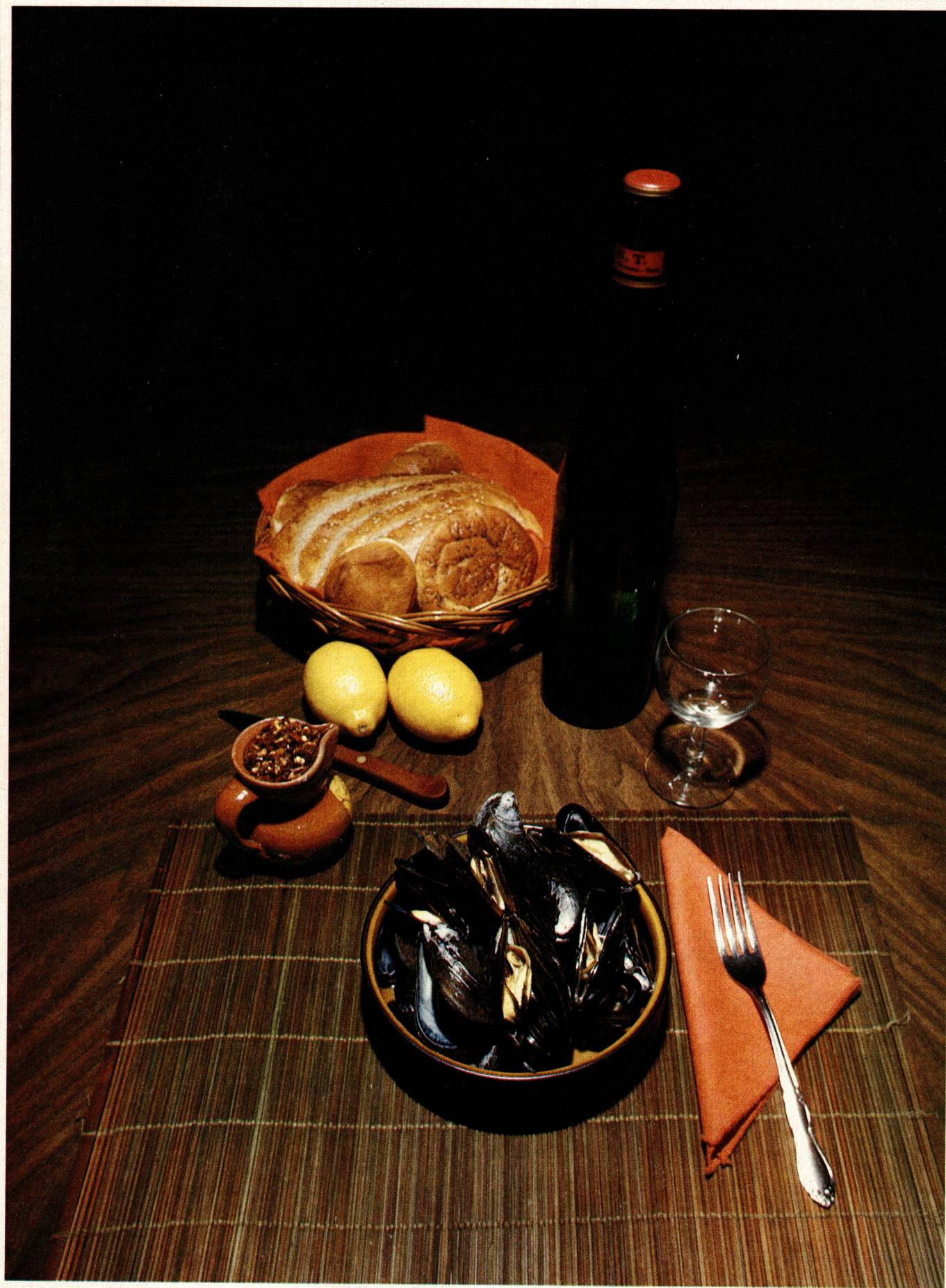
Enclosed is \$2.00. Please send my book.



Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_

SD-118





photograph by Herb Taylor



# MUSSELS

## A SHELLFISH DELIGHT

BY HERB TAYLOR

They're the least expensive item at the fishmarket and the easiest animal to find at the seashore. They're appearing on more and more restaurant menus and they're becoming a very "in" thing to serve to guests. So, if you're in the mood for seafood and lobster is out of the question, oysters aren't in season, and you don't want to wade in the muck for clams — try mussels. Yes, those ugly little barnacle-covered black things that cover the rocks at the beach. You'll be in for a tasty seafood surprise.

Mussels have been a long time favorite in Europe. In fact gigantic mounds of mussel shells left by prehistoric man in Denmark, date back at least 10,000 years. Europeans relish mussels so much that the demand would have surpassed the supply a long time ago if the Europeans hadn't shifted from simply gathering naturally available mussels to the actual cultivation of a mussel crop. Every European country with a coastline has an aquaculture industry devoted to rearing mussels. Many have been in operation for hundreds of years, and in Italy mussels have been under cultivation almost continuously since the time of the Roman Empire.

Despite numerous attempts to get Americans to eat mussels, they have been wrongfully neglected by shellfish fanciers on this side of the Atlantic. They are an excellent source of protein and their neglect is a shameful waste. They're certainly more abundant than scallops, as readily available as clams or oysters, and have a delicious nut-like flavor.

### WHERE TO FIND THEM

Mussels are everywhere. They survive and flourish in the lower reaches of tidal zones of just about every stretch of coast in the United States and Europe — anywhere there is something for them to cling to.

They grow on rocks, pilings, wreckage, in the pounding surf or in the mud of quiet estuaries. They also grow on each other, forming living carpets of protein that can be had for virtually nothing. Gathering a meal of mussels is simply a matter of knowing the quality of the water and grabbing as many handfuls as you need. For the diver, an even vaster supply is available below the low-tide line.

### BEFORE YOU GATHER MUSSELS

Before taking any shellfish, knowing the quality of the water they've been living in is of the utmost importance. Mussels and many other shellfish, including clams, oysters, and scallops, are filter feeders. They gain nourishment by straining the water that envelops them. They depend on tides and currents to bring them fresh supplies of microscopic plants and animals on which they feed. They are truly products of their environment. If the water they come from is unhealthy, they will be the same. Be sure you know the water you are collecting in is not polluted.

You should also be aware of the condition known as "red tide." The phenomenon, which goes under different names in different areas, is caused by the mass bloom of potentially toxic microscopic plants. When mussels, and the other filter feeders, strain water containing these plants, they concentrate the toxin to levels that can be poisonous to humans.

On the East Coast, the phenomenon occurs at infrequent irregular intervals, but on the West Coast it occurs annually. For that reason the taking of mussels is banned along large stretches of the West Coast from May to October. In southern waters its appearance is sporadic.

If you have any doubts about where, or when it is safe to collect shellfish, contact your state's Department of Conservation or Fish and Game Office. They can supply you with maps detailing areas that are closed to shellfishing because of pollution. They can also give you information about "red tide" or pollution warnings.

### DIFFERENT SPECIES

By far the most popular variety taken for food in the U.S., and around the world for that matter, is the common blue mussel, *Mytilus edulis*. Its smooth blue-black shell, which grows in concentric bands, is easily distinguished from another common variety that is found only on the East Coast — the ribbed mussel. Its Latin name varies with what you read, but generally it is called either *Modiolus demissus* or *Modiolus plicatulus*. The ribbed mussel, with its brown-yellow shell and radiating ribs, is for some strange reason not even eaten by the people who eat blue mussels — a case of double neglect. Neglecting this variety is as big a mistake as eliminating all mussels from one's diet. Ribbed mussels are just as delicious as their more celebrated cousins, despite what the father of food foraging, Euell Gibbons, has to say about them in his book on seashore gathering.

On the West Coast there are about eight native species to choose from, in addition to blue mussels which are locally referred to as bay mussels. Bay mussels and sea mussels, *Mytilus californianus*, are the two most abundant species and they look very much alike. Sea mussels, though, have a brownish shell and are found along surf swept shores. Another variety often found in abundance is *Modiolus rectus*, sometimes called the straight mussel. Its long, narrow, dark-brown shell make it easy to identify.

There is another species that is sometimes seen on the northern reaches of both coasts, but it is a deep water variety and usually shows up on the shore only after violent storms. The common name for *Modiolus modiolus* is the horse mussel because it is generally twice the size of other mussels, about five to six inches long. It is a rich chestnut brown in color, but fresh ones in amounts large enough for the meal are rare — unless, of course, you can locate a bed underwater.

### GATHERING

To get enough clams for a meal you have to tread about in mud or shovel sand for hours. With mussels, however, once you locate a bed you can usually find all you can possibly use with two or three steps. In some marshy areas it is impossible to walk without stepping on the tops of thousands of mussels. If in the process of gathering you're tempted to try a few raw, go right ahead. They're easy to open. Simply pushing the shells apart with the fingers of one hand in a shearing motion will open them enough to get a knife between the shells. The rest is easy. The British eat them raw with a bit of



## SHELLFISH DELIGHT

lemon and a sprinkle of fresh pepper. They're also eaten raw with French bread rubbed with a raw onion.

Once you've gathered all you'll need, usually about 10 to 15 per person, depending on size and appetites, you're ready for the next step.

### CLEANING

Cleaning mussels of all the things that grow on their shells is a tedious, messy job and probably one of the reasons for their lack of popularity in the U.S. Because mussels spend their whole life in one spot, many marine plants and animals grow on them. Usually they are found covered with seaweed, tiny sponges, barnacles, and other mussels. But a stiff brush, a dull knife and a lot of scrubbing and patience is all you'll need to get them ready for the pot. Just keep in mind that the reward will be well worth the work.

While cleaning be sure to pull out the small tuft of hair-like material that protrudes from between the two halves of the shell near the base. That "hair" is called the byssus, and it's the tough silky threads the animal secretes to secure itself to its surroundings.

Even mussels from the fishmarket have to be scrubbed and scraped a bit. There they usually sell for about 50 cents a pound or less, when you can find them. You can easily test for freshness by pinching closed any shells that are open. If the shell doesn't stay closed, the animal is dead or close to it and would be best left where it is. Be sure also never to take any with broken shells.

If your mussels came off or near a sandy bottom, it would be a good idea to put them in a bucket of sea water and let them sit undisturbed for at least an hour. This will give the animals plenty of time to clean themselves of any grit they might have in their systems.

Now with the mussels clean inside and out, you're ready to follow any of the recipes below. Any dry white wine goes well with mussels, but best of all is a cold crisp soave — *Buen appetito!*

### RECIPES

#### From France: MOULES A LA MARINIÈRE

There are probably a hundred variations of this simplest and easily one of the best methods of preparing mussels. Ingredients and proportions can vary depending on what you have available.

mussels — enough for four	2 tbs. parsley — fresh is best
1/3 bottle dry white wine	3 tbs. butter or olive oil

1 small chopped onion or chopped shallots or 1 crushed garlic clove	fresh ground pepper to taste
--	---------------------------------

Put all the ingredients in a large pot, cover and steam until the mussels open. Discard any that don't open. Serve the mussels in large bowls with some of the broth and crusty French bread.

#### From Italy: MUSSELS AND SPAGHETTI

mussels — enough for two	1/2 tsp. parsley
1 can tomato sauce (8 oz.)	1 bay leaf
1 tbs. olive oil	a pinch of sugar
1/4 clove garlic	salt and fresh pepper to taste
1/2 tbs. oregano	spaghetti for two

In a sauce pan, brown the garlic in the olive oil, add the tomato sauce and a small amount of water. Heat and stir for five minutes. Add oregano, bay and parsley. Then sugar, salt and pepper to taste. Stir often over a medium flame for about 20 minutes. Remove bay leaf and garlic. Prepare spaghetti separately and, when it's done, add the mussels to the sauce. When the mussels open, pour the sauce and mussels over the drained spaghetti. This recipe can be improved upon immensely if you prepare your own marinara sauce from fresh tomatoes.

EARN  
YOUR  
DIVING  
PhD

Go for the Gold . . .

The Coveted Gold Chevron  
of PADI International College!

(Next class convenes 20 Nov. 1978)

- "Gold" Open Water Instructor (Master Instructor Preparatory)
- Open Water Instructor
- Master Scuba Diver
- ALL Specialty Diving Certifications
- USCG Boat License Preparatory
- Small Marine Engine Repair
- Dive Shop/Resort, Sales, Management, Promotions

Our Courses are designed for both the serious and career-minded sport diving enthusiast. Have fun in the sun and dive the famous kelp beds of Southern California. Learn and dive aboard our USCG licensed charter boat.

Call 223-9821 or write for additional information NOW!

For complete details on any of the programs, write or telephone:

Commander Jim Williams, U.S.N. (Ret.)

President, PADI International College in California, Inc.

1310 Rosecrans (Point Loma), San Diego, California 92106

Commander Jim Williams, U.S.N. (Ret.)

President, PADI International College in California, Inc.

1310 Rosecrans (Point Loma), San Diego, California 92106

Telephone: (714) 223-9821

Name \_\_\_\_\_ Age \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_

Send me info on ☐ Master Instructor ☐ 10 Week Inst. ☐ 1 Week Inst. ☐ Master Scuba Diver ☐ Sales Promotion For Dive Shop ☐ Inst. or Diver Specialty Certifications ☐ Boat Charters ☐ USCG License Preparation

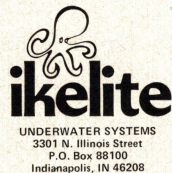


# IKELITE

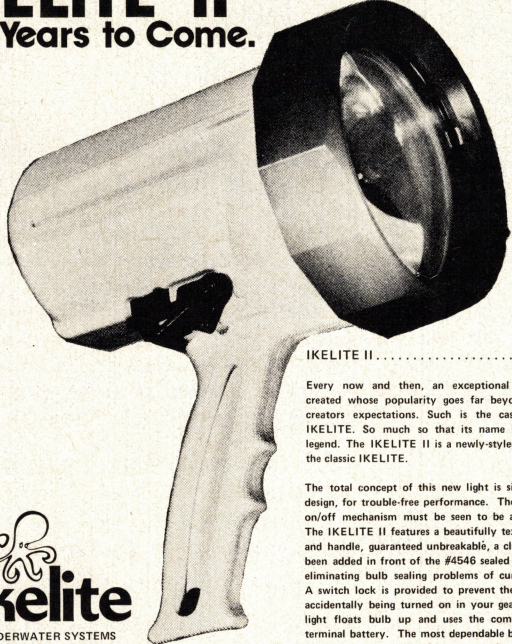
The Standard for Years.

## IKELITE II

For Years to Come.



SEND \$1.00 FOR NEW 1978 CATALOGUE.



IKELITE II ..... \$19.95

Every now and then, an exceptional product is created whose popularity goes far beyond even its creators' expectations. Such is the case with the IKELITE. So much so that its name has become legend. The IKELITE II is a newly-styled version of the classic IKELITE.

The total concept of this new light is simplicity in design, for trouble-free performance. The innovative on/off mechanism must be seen to be appreciated. The IKELITE II features a beautifully textured case and handle, guaranteed unbreakable, a clear lens has been added in front of the #4546 sealed beam bulb, eliminating bulb sealing problems of current lights. A switch lock is provided to prevent the light from accidentally being turned on in your gear bag. The light floats bulb up and uses the common spring terminal battery. The most dependable battery/bulb combination available for your main lighting or back-up lighting system.

See the NEW IKELITE II at your local dealer.

# C the bright LITES



**C-LITE I #1040**  
Greater intensity than lantern battery powered lights in the unique C-Lite shape. New push-on snap cap with all of the compact size and handling features of the C-Lite II. The special sealed beam bulb requires six "C" size alkaline batteries and produces 10,000 initial beam candlepower compared to the 6,000 candlepower of our famous Ikelite and other six volt lantern battery powered lights.



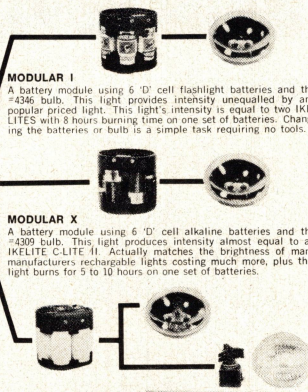
SEND \$1.00 FOR NEW 1978 CATALOGUE.

**C-LITE II #1050**  
With ni-cad batteries and charger. The brightest rechargeable light in the industry. The push-on cap allows easy opening and sealing, and you can tell at a glance if the light is sealed properly. This light is guaranteed unbreakable and safe to a working depth of 800 feet.  
**INTENSITY:** The C-Lite II provides about 25% more intensity than similar lights. A lantern battery powered light provides about 6,000 initial beam candlepower (as rated by G.E. and Westinghouse) compared to 100,000 provided by the C-Lite II. The unbreakable lens cover in front of the bulb provides twice the beam concentration and intensity under water.  
**POWER:** Six special ni-cad batteries provide a constant intensity for almost 1 1/2 hours between charges.  
**HANDLING:** The compact size offers unlimited applications and mounting possibilities. It could easily adapt to an arm, belt or head mounted holster. Buoyancy is slightly negative, slowly sinking bulb up.

## MOD • MODULE • MODULAR CHANGE • CHANGEABLE • INTERCHANGEABLE BRIGHT • BRIGHTER • BRIGHTEST



**IKELITE MODULAR LIGHT**  
Available in clear or black unbreakable Lexan™, push-on "O" ring seal cap, rotating on/off on switch, and switch lock. Available in either rechargeable or non-rechargeable models, with all battery modules interchangeable. The modular design allows for endless variations of usage: ... a battery module charging while using another, a non-rechargeable battery module as a back-up, a hand light one minute, a movie light the next, etc. No matter what model you start with, any of the battery modules can be interchanged in a matter of seconds.



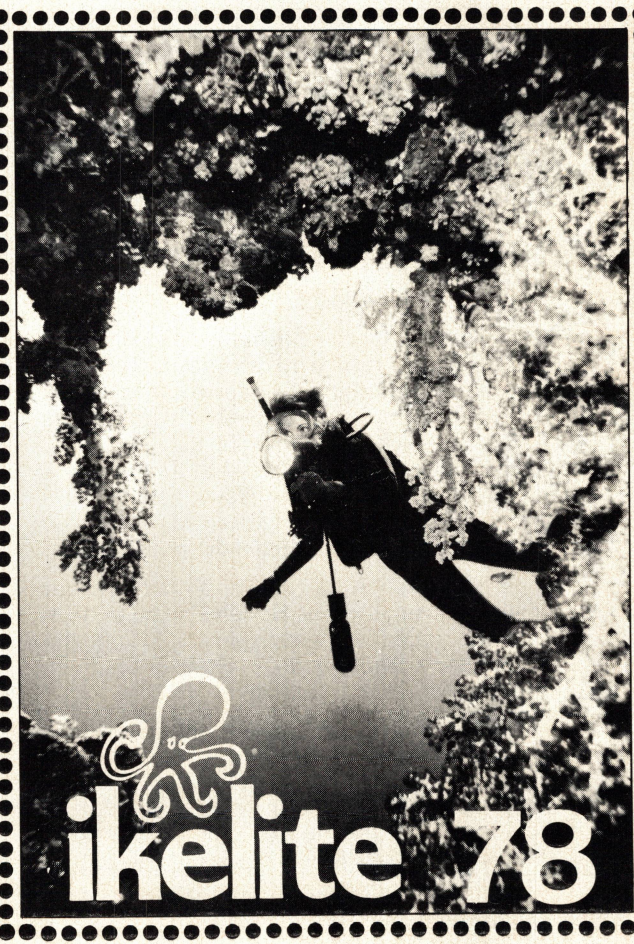
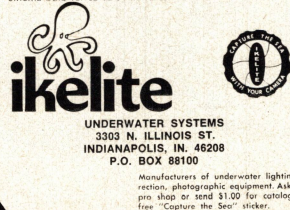
**MODULAR I**  
A battery module using 6 "D" cell flashlight batteries and the #4346 bulb. This light provides intensity unequalled by any popular priced light. This light's intensity is equal to two IKELITES with 8 hours burning time on one set of batteries. Changing the batteries or bulb is a simple task requiring no tools.

**MODULAR X**  
A battery module using 6 "D" cell alkaline batteries and the #4309 bulb. This light produces intensity almost equal to an IKELITE C-LITE II. Actually matches the brightness of many manufacturers' rechargeable lights costing much more, plus this light burns for 5 to 10 hours on one set of batteries.

**MODULAR SUPERLITE**  
A battery module with 7 rechargeable NI-CAD batteries, a 110 volt charger (12 volt optional) and a #4308 dual filament bulb. This light is unquestionably the world's brightest diving light. The dual filament bulb offers spot or flood lighting. Batteries reach full charge in 16 hours, may be charged in or out of the housing, burning time 1 hour on spot and 2 hours on flood. This same battery module is used to power the movie light.

**MODULAR MOVIE LITE CONVERSION**  
A bracket, mounting bar and 3400 degree Kelvin cinema bulb. Add this to the Superlite and you have a movie light which will attach to all IKELITE handle assemblies. The Superlite battery module used to power the movie light provides constant voltage until complete discharge. A full charged module will power the cinema bulb for 12 to 14 minutes.

# THAT'S THE MODULAR LITE SYSTEM



# ikelite 78



## SHELLFISH DELIGHT

### From Greece: STUFFED MUSSELS

2 doz. well scrubbed mussels 1 tsp. allspice  
 3 small onions, chopped fine 1/4 cup pine nuts (pignoli)  
 1/4 cup olive oil 2 tbs. fresh parsley,  
 1/2 cup rice, raw fresh black pepper to taste

Steam mussels in wine. Remove mussels from shells and reserve all. In a separate pan cook onion in olive oil until transparent. Add rice and cook for five minutes stirring constantly. Add one cup liquid from mussels, cover, and continue cooking for 15 minutes. Add all remaining ingredients and cook until rice is done. Fill the shells with the mixture and serve hot or cold.

### From The Netherlands: MUSSEL SOUP

4 doz. scraped mussels 1/3 cup butter  
 1 stalk celery, coarse cut 1/2 cup flour  
 1 tbs. butter 1 cup heavy cream  
 1/2 bottle chablis chopped chives

Steam open mussels in a pan with one tablespoon butter, celery and wine. Remove from shells and keep warm. Strain



liquid through cheese cloth and add water to make one quart. Bring to a boil and gradually add the butter and flour which has been blended together, stirring constantly. Cook five minutes on low flame. Add mussels and cream. Serve hot and sprinkle each portion with chives.

### From Cuba: MUSSEL SOUP

3 doz. mussels 3 cloves  
 2 medium onions, chopped fine 2 tsp. lemon juice  
 1 green pepper, chopped fine 1/2 cup rice  
 2 tbs. chopped parsley 1 cup dry white wine  
 4 tbs. olive oil fresh pepper

In a heavy pot heat the oil, then add the onion, green pepper and parsley. When onion is transparent add the cloves and

lemon juice. Add the mussels and two cups of boiling water and keep on medium flame for 15 minutes. Remove mussels from shells and reserve. Strain broth through cheese cloth and add wine. Cook the rice in the broth and, when it's done, add the mussels and fresh pepper to taste. Serve hot.

### From the U.S.: MUSSELS IN BACON APPETIZER

3 doz. mussels 18 strips of bacon, cut in half

Half cook the bacon, drain and set aside. Steam open the mussels, remove from shells and wrap each mussel with a strip of bacon. Skewer each with a wooden toothpick and bake in a 400 degree oven until the bacon is crisp, a few minutes under the broiler will speed the process. Delicious with dry sherry. »

# SEA SCRUBBER®

## UNDERWATER HYDRAULIC ROTARY BRUSH HULL CLEANING SYSTEM

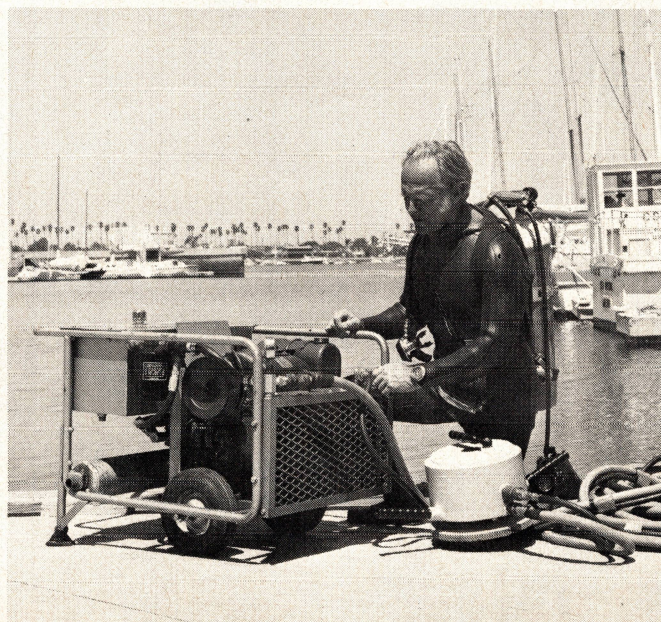
**Diving's great** . . . why not make it profitable? Easy to operate, fast and efficient, the Sea Scrubber is the professional underwater brushing system, capable of restoring a ship's hull to its original finish . . . without damaging the paint. The **Sea Scrubber** is one of the U.S. Phosmarine systems currently used by the Navy, fishing fleets and pleasure boats around the world. It is also ideal for cleaning commercial swimming pools.

For larger ships, such as tankers and container vessels, we recommend our **Brush Kart System**, which is unequalled in performance. With the U.S. Phosmarine underwater hydraulic systems, the potential for profit is unlimited.

For complete details and catalog, send \$2.00 to:

# U.S. PHOSMARINE

P.O. Box 16531, Irvine, Ca. 92714  
 (714) 540-9455 Telex 678 401





**Sub-Aqua Specialties**

2236 BEMIS ROAD • VALDOSTA, GEORGIA 31601 • (912) 242-1152

**The Best for Less...**

Drive in  
on your way to  
Florida or call us for the  
latest diving information and  
the best equipment prices around!

**Call Toll Free:**  
**Nationwide: 1 (800) 841-4443**  
**Georgia Residents: 1 (800) 342-7156**  
**Call now and receive a FREE air card!**

Here's just a sample of our many pre-Christmas specials...

**U.S. DIVER'S  
80 Cubic Foot  
Aluminum Tank  
WITH K VALVE**

ONLY ..... **\$109<sup>95</sup>**

**AQUA-DIVE TIME  
and DEPTH  
WATCH** MODEL 50 **\$189<sup>95</sup>**

**U.S. DIVER'S  
CALYPSO VI  
REGULATOR**

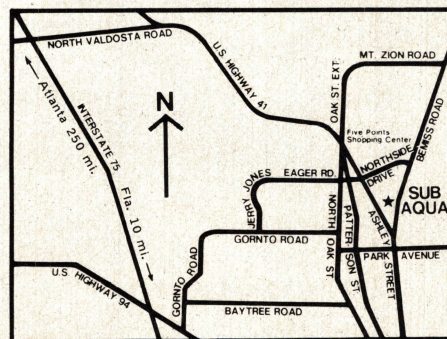
NOW ..... **\$99<sup>95</sup>**  
PRICED AT.....

**AQUA-DIVE  
WATCH** MODEL NO. 566 ..... **\$59<sup>95</sup>**



Call us for  
all your  
diving  
needs!

- Fast, Free Shipping
- Charge it to your Master-Charge or VISA



Sub-Aqua Specialties is a PADI 5 Star Training Facility.

**We have it all!**

A DIVISION OF BUESCHER ENTERPRISES, INC.

Underwater life support systems are potentially dangerous to a non-trained user. These include scuba tanks, regulators and buoyancy compensators. This ad does not constitute an offer to sell these items via mail order.



# Film Festivals & Symposia

## TZIMOULIS HOSTS UPS FILM FESTIVAL

For an evening of great entertainment, the University of Southern California Sea Grant, the Los Angeles Natural History Museum and the Los Angeles Chapter of the Underwater Photographic Society will present the 16th Annual Los Angeles Underwater film festival and photographic competition.

On Saturday night, November 4th, Paul Tzimoulis, editor-publisher of SKIN DIVER Magazine, will host an evening of delightful underwater films including: Lee Tepley's Study of Sea Otter Antics, Casey Jones' new comedy on garibaldi, and Bob DeRuff's film documenting the wreck of the *Shinkoku Maru* in Truk Lagoon. There will also be a beautiful multi-media show topped off by the new comedy adventures of "Scuba Man."

The film festival will be held at the Bouvard Auditorium on the University of Southern California campus. Tickets will be available at the door or by mail. For further information about the festival or photo competition write: Under-

water Photographic Society, Box 7088, Van Nuys, CA 91409. ☎

## SEAMARK '78

Seamark '78 will be held at the New England Aquarium in Boston, November 4th at 7:00 p.m. According to Tony Falerno, event chairman, the unique fund-raising evening benefits the Cotting School for Handicapped Children in Boston.

Volunteers from more than 20 dive clubs organize and run Seamark which in three years has raised over \$20,000 for Cotting students and other handicapped children and adults. This year's goal is \$10,000, said Falerno.

Seamark activities include dancing to live bands, cocktails, underwater films, a dolphin show and special main tank diving exhibitions. Tickets can be obtained through the Cotting School (241 St. Botolph St., Boston, Mass. 02115), for \$7.50 each. Cost includes parking and a chance at the grand prize. ☎

## DENVER FILM FESTIVAL

The Denver International Underwater Film Festival II will be held at the Jewish Community Center in Denver, Colorado, on November 14, 15, and 16.

The festival will feature Paul Tzimoulis, editor-publisher of SKIN DIVER Magazine, with films and slide shows,

including *Planet Ocean*, *Small World*, and *The Making of THE DEEP*.



photograph by Harry Wadsworth

Also featured will be Professor Robert Hohlfelder, an U/W archaeologist from the University of Colorado, who will deliver a slide presentation on the excavation of ancient harbors.

For information, contact: Rocky Mountain Diving Center, Lakewood, Colorado; telephone (303) 232-2400. ☎

## INWARD TO THE SEA

The seventh annual Inward to the Sea U/W film festival will be held on November 4th at the Lisner Auditorium, 21st and H Streets NW, Wash., DC.

Seminars will be held from 9:00 am until 5:00 pm. The film festival begins at 7:30 pm with a reception immediately following at 10:15 pm.

Tickets may be ordered by mail or purchased at the door: seminars, \$3; film festival, \$4.50; reception, \$5.

For information, contact: Inward to the Sea, Box 41010, Washington, DC, or phone (202) 347-0206. ☎

## Introducing the Time Capsule!

### The Dive Watch You Can Count On.

ONE YEAR  
OVER-THE-COUNTER  
REPLACEMENT WARRANTY

GUARANTEED TO A  
DEPTH OF 130 FEET

This shock proof 17 jewel movement is available from your local dealer or Time Unlimited in a variety of six colors, featuring a nitrogen filled "pop-out" instrument capsule mechanism that is easily removed for quick exchange eliminating repair delay.

Time Unlimited, 3186-F Airway Avenue, Costa Mesa, CA 92626

- ☐ #2005 — black face, white no's
- ☐ #2008 — black face, green no's
- ☐ #2009 — black face, red no's

- ☐ #2017 — red face, white no's
- ☐ #2025 — black face, org. no's
- ☐ #2010 — white face, blk. no's (shown above)

Dealer Inquiries Invited

PLEASE SEND ME: ☐ @ \$59.95

Name \_\_\_\_\_

Address \_\_\_\_\_

City/State \_\_\_\_\_ Zip \_\_\_\_\_



# Gourmet Courses



## Appetizers

Underwater Photography  
Surface Supplied Diving  
Recompression Chamber Operations

## Main Courses

Environmental Aquaculture (B.S.)\*  
Environmental Science Technology (A.S. & B.S.)  
Oceanographic Technology (A.S. & B.S.)  
Electronics Technology (A.S.)  
Underwater Technology (A.S.)  
Offshore Marine Technology (A.S.)  
Medical Technology (A.S. & B.S.)

F.I.T. admits students of any race, color and national or ethnic origin and does not discriminate on the basis of handicap in admission or access to its programs.

\*All Main Courses feature Associate of Science or Bachelor of Science degrees.

For more information complete the attached coupon.

### Florida Institute of Technology

Office of Admissions  
1707 N.E. Indian River Drive  
Jensen Beach, Florida 33457

Name \_\_\_\_\_

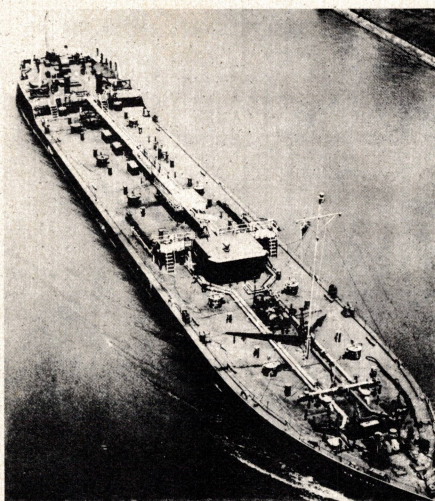
Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_ Phone \_\_\_\_\_ Age \_\_\_\_\_

SDRP1178





# The Chester A. Polling New England's Latest Shipwreck

BY PAUL ADLER AND JACK HINZ

**T**he *Chester A. Polling* was a 281 foot coastal tanker. She had unloaded a cargo of heating oil in Boston and on January 10, 1977, began her return trip to New Hampshire. A few miles off Gloucester, Massachusetts, the ship ran into a severe winter storm and broke in half. The bow sank almost immediately; the stern, however, stayed afloat and was pushed by heavy seas toward Gloucester — until it eventually slipped beneath the surface. The United States Coast Guard, in one of New England's most dramatic rescues, was able to save all but one of the tanker's crew.

The bow of the *Polling* went down in about 190 feet of water nearly two and one-half miles SSE of Gloucester. The stern, pushed shoreward by the storm, came to rest in about 75 feet of water just 1500 yards off of the Eastern Point breakwater — which encloses part of the mouth of Gloucester Harbor. The stern is marked by a red nun buoy bearing the letters "WR."

Sunday morning, February 27, 1977, dawned cold, overcast, and dreary. It found three divers preparing to leave East Coast Divers Inc. on what each hoped would prove to be a real adventure — exploring a near virgin wreck. Arriving at the boat launch ramp in Gloucester, we (Paul Adler, John Butler and Jack Hinz), worked feverishly inflating our 13 foot Avon, hauling tanks, and donning drysuits. The air was a chilly 35°F and the water an even chillier 32°F. Though the run from the launch site to wreck site lasted only 15 minutes and the sea looked calm, it proved to be a wet ride indeed!

As we rounded the Eastern Point breakwater, the buoy marking the wreck came into view and we smelled faint traces of diesel fuel. The odor became stronger the closer we came to the buoy until it was almost suffocating. We quickly dropped anchor amidst a collection of floating hoses and lines, hooked into the wreck on our first try, and rolled into the water delighted to be breathing

clean air once again.

The visibility was around 15 feet, and the ship materialized quite suddenly out of the gloom. We were all a little stunned, for here at a depth of 55 feet was the kind of wreck every diver dreams about. A real ship (or at least half of one) to all appearances intact, resting perfectly upright on a sand bottom! For a moment we merely hovered, taking in the perspective, then, recovering from our reverie, began to explore.

Our anchor had caught in the very end of the stern. A white chain railing ran around the perimeter of the ship as far as we could see. Swimming a few feet upward brought us over the ship's main rear deck. All the hatches were still dogged down. On either side of the rearmost hatch were large lockers: The one on the port side had the words "Rocket Gun" imprinted on it; the locker on the starboard had no markings. We opened it and found an assortment of chipping hammers, wrenches, and scrapers. "How convenient," we thought, "not only do we have a wreck but it comes complete with the tools to disassemble it."

We left the lockers and continued moving toward the front. Eventually, the main deck ended and the fuel storage tanks began. A catwalk, resplendent in its white paint, ran down the center of the fuel storage tanks. Beneath it, as well as off to the sides, ran numerous pipes, valves, and hatches. We floated effortlessly above the catwalk, the two large diesel generators which flanked it, and then the ship just ended. The catwalk and pipes became an unrecognizable tangle of metal, but the break itself was quite clean — almost as if a giant knife had cut the ship in two. We peered over the edge of the break but, seeing nothing in the blackness, decided to explore no further. Our air supply was getting low; it would soon be time to surface. We began swimming back toward the stern.

There was no apprehension in making any of the succeeding dives on the

*Chester A. Polling*. In fact each dive proved to be an adventure as we proceeded to methodically explore the entire ship. On our second dive we dropped over the stern to the sand bottom and saw the two barn door-like rudders cradling the two five foot diameter brass propellers. On the starboard side John found a badly battered lifeboat as well as a broken ship's mast.

It wasn't long before we'd concluded our exploration of the ship's exterior and decided to turn our attentions to her interior. We undogged the hatch furthest forward and with our combined strength managed to open it. Paul went inside first trailing a line, Jack followed, and John remained at the entrance. The inside of the ship was dark and dirty with oil; the water was filled with floating debris. The passageways proved very cramped and we had to be on guard to avoid getting tangled in clothes and lines. The cabins off the port side corridor were a mess — filled with water-logged mattresses, pieces of paper, and items, such as a television set, floating on the ceiling. Among the more interesting cabins in this part of the ship was that labeled "Chief Engineer." It had more garbage in it than some of the others including a locker full of light bulbs. Paul opened the locker and the light bulbs floated up to the ceiling and imploded, making a loud noise!

Below this first level, reserved for crew quarters, Paul stumbled on a lower second level. It turned out to be the engine room, complete with gauges, telegraphs, and two gigantic diesel engines.

Having explored the engine room to our satisfaction, we moved on to the next hatch. This hatch, larger than any of the others, proved more difficult to open but finally yielded to our persistent efforts. Once inside, John and Jack found themselves facing a cage containing row upon row of carbon dioxide cylinders — part of the ship's main fire extinguisher system. But Paul's attention was riveted to something much more exciting — an 11 by 17 inch rectangular



brass plaque with the inscription: "Plattsburg Socony, Builders, United Dry Dock Inc., Hull No. 823, 1934, Staten Island, New York." He had found the builder's plaque!

Though passages led off from the fire extinguisher area, we found them too cluttered with debris to penetrate safely, so we moved down to the next hatch. This appeared to be more of a ventilation hatch than an entrance and proved impossible to open from the outside. Paul finally smashed one of the dead lights in the hatch cover to get at the bolts holding the hatch in place. At the same time a quarter pound of butter slowly floated out and headed for the surface. It was pretty clear to all of us that we would be shortly dropping into the galley. The hatch at last gave way and we dropped inside. This room had more silt in it than any of the others we'd explored. The silt, however, didn't prevent us from seeing the galley clock, the brass dinner bell, a large brass thermometer, as well as a healthy assortment of pots, pans, cups, saucers, dinner plates, and flatware. Adjacent to the galley was an area marked "After Storage" which contained a large assortment of unmarked crates and boxes.

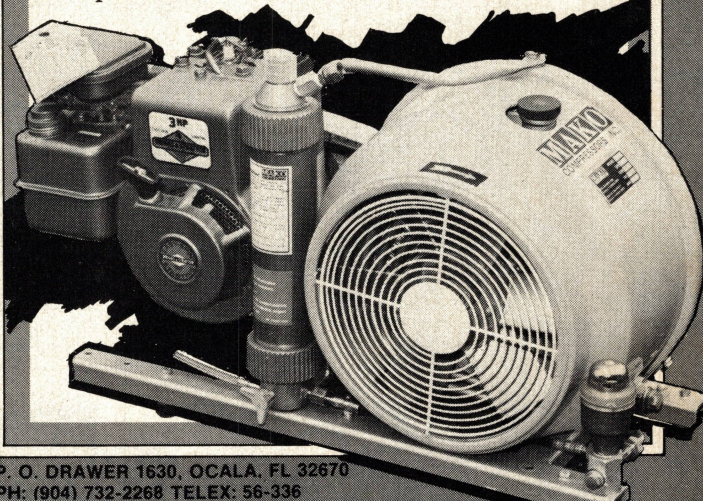
Up until this point, the only corridors we had explored had been on the port side of the ship. The starboard side was so completely filled with ducting, wood, and other junk that neither Paul nor Jack ever bothered to explore it in any detail. It was on one of our last dives that John, while poking about in the cramped confines of the starboard corridor saw a sign above a cabin that set his heart pounding — "Captain." He was elated.

The next four dives were spent in clearing junk out of the starboard corridor in an attempt to gain access to the captain's cabin — this was the last place in the ship we had not explored. At last, most of the obstructions from the corridor were gone and the cabin was opened. It was full of garbage from ceiling to floor. Rummaging around carefully we found the 1973 and 1974 ship's logs and very little else.

Since our early dives on the *Chester A. Polling*, probably over 100 other divers have descended on her. Souvenir hunters as well as commercial salvors have denuded her almost to the bulkheads. On our most recent dives we found ourselves staring at the skeleton of a ship. The deck generators were gone, all the hatches were gone; in fact, someone has even been trying to remove the propellers (not very successfully since they're still there). But an even more subtle change has started taking place. The sea has placed a fuzzy coat of marine organisms on every square inch of the ship, while overhead, schools of cod, pollack, and hake mill about. The sea has begun the transformation of the *Chester A. Polling* from wreck to artificial reef. 🐟

# PORTABLE

Remember that remote diving site? Our Purus can put you there again. Fills a 71 cf tank in 24 minutes. For more information on the Purus or larger systems, contact Mako Compressors, Inc. Dept. SD-978.



P. O. DRAWER 1630, OCALA, FL 32670  
PH: (904) 732-2268 TELEX: 56-336

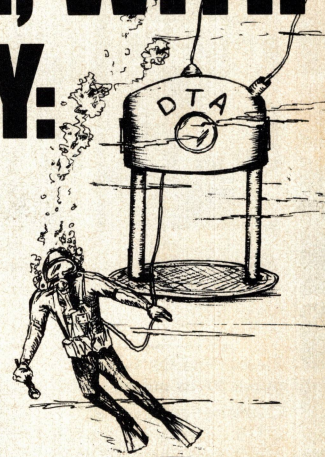
**MAKO**  
COMPRESSORS, INC.

## MAKE IT PAY, WITH TRAINING BY:

**D**iving of every type required for commercial operations, in an area that gives more practical diving weather than anywhere else in the U.S.A.

**T**raining by experts whose only ambition is to produce well trained commercial air/mixed gas divers to work for national and foreign diving contractors.

**A** curriculum that shows you exactly what you are receiving for your investment.



Member; Association of Diving Contractors, Association of Commercial Divers Education, Florida Association of Private Schools.

State approved for V.A. students Voc. Rehabilitation State and V.A.

### DIVERS TRAINING ACADEMY, INC.

RFD#1 - BOX 193-C, LINK PORT  
FORT PIERCE, FLORIDA 33450 (305) 465-1994

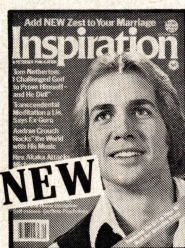
Send \$2.00 for all new 1977-78 Catalog offering complete air/mixed gas Commercial Diving Course.



# Magazine 12 Specials

Only \$1.95 each

A unique selection of Petersen's most popular special interest publications—all fully-illustrated and priced to fit your budget. On sale at newsstands everywhere or use the handy coupon below. Order today—only limited quantities available.



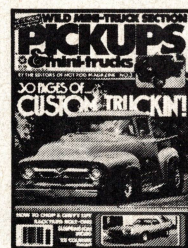
Inspiration #4  
96 pages



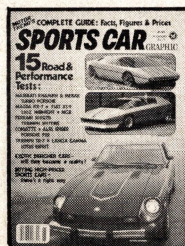
HR Corvette No. 2  
96 pages



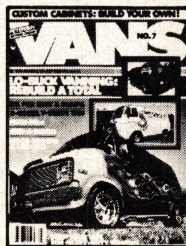
Hot Rod Chevrolet  
96 pages



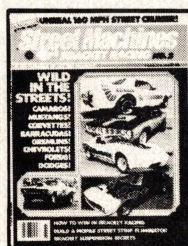
Hot Rod's Pickups &  
Mini Trucks No. 3  
96 pages



Motor Trend's  
Sports Car Graphic  
96 pages



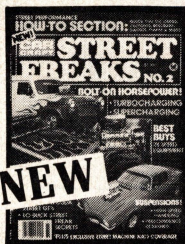
Hot Rod Vans No. 7  
104 pages



Hot Rod's Street  
Machines & Bracket  
Racing No. 2  
96 pages



Cartoons Fall '78  
96 pages



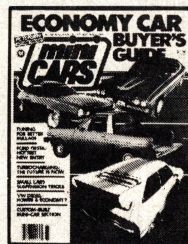
Car Craft  
Street Freaks No. 2  
96 pages



Hot Rod  
Engines No. 2  
96 pages



Hot Rod  
Rod & Custom No. 6  
96 pages



Petersen's Mini Cars  
96 pages

Please send the following publications postage paid.

- ☐ Inspiration #4 \$1.95
- ☐ HR Corvette No. 2 \$1.95
- ☐ Hot Rod Chevrolet \$1.95
- ☐ Pickups & Mini Trucks No. 3 \$1.95
- ☐ Cartoons Fall '78 \$1.95
- ☐ Street Machines & Bracket Racing No. 2 \$1.95
- ☐ Sports Car Graphic \$1.95
- ☐ Mini Cars \$1.95
- ☐ Street Freaks No. 2 \$1.95
- ☐ Engines No. 2 \$1.95
- ☐ Vans No. 7 \$1.95
- ☐ Rod & Custom No. 6 \$1.95



Petersen Publishing Co.  
Magazine/Circulation  
6725 Sunset Blvd.  
Los Angeles, CA 90028

C19-1178

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

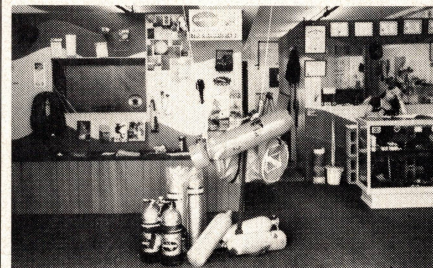
I am enclosing check or money order for the total amount of \$\_\_\_\_\_. California residents add 6% sales tax. Please allow 4-6 weeks for delivery.

Order now, limited quantities available!

## PADI's FIVE STAR PROGRAM

BY BRYAN JONSON

What does a land-locked capital city have in common with the sport of scuba diving? People in all places do crazy things and maybe this city proves that scuba diving is one of the fastest growing sports around today. Columbia, S.C. must have something going for it, because the world's first five star PADI training facility is located there. The reason? Probably because of the synergistic reaction among the people involved in creating the dive community that makes the shop function.



photograph by Bryan Jonson

Underwater Works, Ltd. thinks that the customer comes first no matter what the result of the transaction. Strange as this action may seem, the outlook seems to be working, because in the humorous words of the owners, "We have so much business at this time we think we'll just stop taking new customers." Even though this limitation will never occur, it shows that this shop will be a leader in promoting the sport throughout the nation.

Chauncey B. Chapman, III and Susannah Traywick make a very remarkable combination. They both project confidence, professionalism, and expertise, while stressing safety and excellence in a fun sport.

There is a long road ahead for those shops that wish to become a five star facility. PADI has taken the best points and ideas of the sport and turned them into a comprehensive program of instruction, along with a serious attitude toward safety. It's advancing toward a state of the art never before achieved in this particular sport.

Underwater Works, Ltd. is in the process now of promoting a greater state of the art through its affiliation with PADI. In the relatively short time it has been in existence, the shop has done a remarkable job of carrying forth the original efforts of the program.

The five stars are five basic requirements which show excellence in the field of sport diving. All PADI shops do not uphold every requirement, and thus the five star program came into existence. One of the requirements is pure air: no oily taste, no foul odor, no trace of carbon monoxide. Another is



# NEED A LIFT?



Our HEAVY DUTY LIFT BAGS have been used in world wide salvage operations by the leading commercial and professional divers. We manufacture lift bags with lift capacities from 50 Lbs. to 20,000 Lbs. For complete information, call or write for our free catalog to:

SUBSALVE INDUSTRIES, INC.  
P. O. BOX 9287  
PROVIDENCE, RHODE ISLAND 02940  
USA

401 - 272-2163

DEALER INQUIRIES INVITED





# Dive with a Winner!

Harvey Custom Suits combine comfort, strength and style to give you the utmost in wetsuits.

**HARVEY'S**

2505 SO. 252ND STREET  
KENT, WASHINGTON 98031  
(206) 824-1114



Tough, durable light-weight construction designed to allow unrestricted movement at elbows, knees and shoulders where you need it most.

Harvey's suits fit snug and keep excess water away from your body to keep you comfortable in the coldest waters on long dives.

Don't settle for less, demand a Harvey Custom Suit... you can't find a better wetsuit anywhere at any price...

So comfortable you may never want to take it off.



## PADI's FIVE STAR PROGRAM

that the shop must be able to offer the best equipment service possible.

Community service is a prime requirement for a PADI shop. Chauncey and Susannah feel that for Underwater Works to be active in the community, their shop must feel the commitment to the divers in that community. Underwater Works, Ltd. publishes a newsletter, sponsors public events having to do with sport diving, is a member of the Columbia Chamber of Commerce, and sponsors events to support the Carolina Children's Home. In addition, Chauncey is a member of the faculty at the University of South Carolina. The shop holds free get-togethers, monthly, including weiner roasts along with a night dive. The shop also sponsors the Divers Down Association which holds dives periodically in different areas of interest. In other words, anything which will promote the betterment of scuba diving along with the betterment of the community, is paramount in the eyes of Underwater Works, Ltd.

To become a PADI five star facility, a shop must go one step further than normal in its training program. Underwater Works offers open water certification instead of the basic scuba course. The idea behind this procedure is that the student receives one more facet in his or her training to help in future dives. After all, the instructor won't be there any more. The student receives a comprehensive classroom program with the theory and slides of the actual underwater practices involved. A comprehensive program of pool training allows the student to develop the skills needed to become a safe and complete open water diver. A minimum of five actual open water dives brings the new diver to the highest level of competency possible.

The last requirement of the PADI five star program and certainly the most important, is that the shop hold business ethics at the highest level possible. In the last five years, the sport of diving has seen small shops spring up at any location which might attract divers. In many cases, this rapid growth has left much to be desired. However, there have and always will be shops that will take the necessary steps to make sure their customers are fully satisfied as to equipment needs and also that they are capable and competent divers. Finally, the shop must uphold these standards for a year previous to the award.

The sport of scuba diving has a great future. All of us who are presently involved in it hope the kind of shop PADI and Underwater Works, Ltd. represent is the kind of shop which will be opened everywhere.

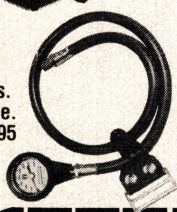
## Danny's Specials!

Unbeatable prices for the end of the Summer



**C** U.S. Div. Full Vision Low vol. mask. \$18.95

**E** U.S. Div. press. gauge. \$32.95



**D** U.S. Div. Rocket fins. \$14.95

**AQUA DIVE 1000**

**A SUPER DEAL \$129.95**



**B**

**F** All metal dive light. \$54.95



**MR12 Regulator. \$109.95**

**A** Parkway 1/4" suit Farmer pants/jacket/hood. \$141.95

80cu.ft. alum. tank  
J-\$116.95  
K-\$109.95



PLEASE SHIP THE FOLLOWING

☐ FREE SUMMER CATALOG

☐ **A** Parkway's 1/4" suit. Nylon two sides, Farmer pants w/jacket. Blk. w/red panel, free reg. hood. ... \$141.95

☐ **B** Aqua Dive 1000 watch, one year store guarantee. Tested to 3000 ft. All metal case, velcro strap. \$129.95

☐ **C** Full vision, U.S. Divers lowest volume wraparound mask w/opt. purge valve. 3 lens, 180° vision. ... \$18.95

☐ **D** U.S. Divers Rocket fins. ... \$14.95

☐ **E** U.S. Divers Pro Dive 1 pressure gauge w/strap clip. Limited supply. ... \$32.95

☐ **F** All metal rechargeable light. Includes battery and charger. ... \$54.95

## DANNY'S DIVE SHOP

1579 Grand Ave., Baldwin, N.Y. 11510  
Tel. (516) 223-8989  
Located bet. Sunrise Hwy. & So. State Pkwy.

VISA \_\_\_\_\_ MASTER CHARGE \_\_\_\_\_

AMERICAN EXPRESS \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

Use and operation of life support equipment should not be undertaken without qualified and proper instruction in their use. This ad does not imply the sale of life support equipment through the mail



# INCREDIBLE OPPORTUNITY FOR YOU!

**This coupon will get you  
the most complete info about the  
fantastic demand for divers...**

The diving industry urgently needs men! The demand for skilled divers will continue into 1980 and beyond. Your chance to break into an adventurous new career has never been better! Many of our graduates are earning \$40-60,000 dollars a year ... some even more! Are you good enough? Find out - NOW.

- **Where the jobs are**
- **How big the wages are**
- **The good news & bad**
- **How you can qualify**
- **Job placement service**

**Clip the coupon — mail today!**

## SUPER COUPON

S11-8

Member: Association of Commercial Diving Educators



### COMMERCIAL DIVING CENTER

272 S. Fries Ave., Wilmington, CA. 90744  
Tel: (213) 834-2501

C.D.C. is the only Diver Training Division of OCEANEERING INTERNATIONAL, INC., with companies in over 17 foreign countries.

☐ I enclose \$2.00 for my copy of "Your Deep Sea Diving Career," CDC's big, new two-in-one catalog.

☐ Enclosed is an extra \$1.00 for Special Service.

NAME \_\_\_\_\_ AGE \_\_\_\_\_

ADDRESS \_\_\_\_\_ TEL. ( ) \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Note: Funds in U.S. dollars only (cash, check or money order); no foreign funds can be accepted.

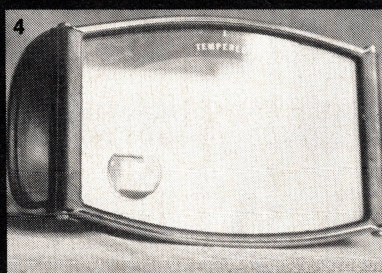
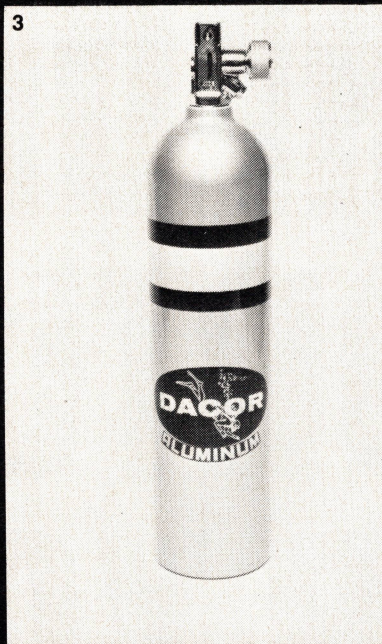


# New Gear



**1 Women's Proflex Suit** — New, form-fitting fashion in feminine dive gear. The new wetsuit material adapts to body curves for warmth and flexibility. About \$240. The small size stabilizing jacket has a built-in backpack for a compact 45 cu. ft. tank. \$260. From Scubapro. Available at your local Scubapro dealer.

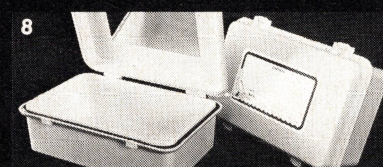
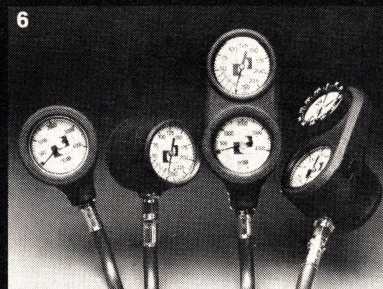
**2 Delta BC** — A specially designed inner and outer bag wraps around the diver's body to prevent squeeze when fully inflated and helps the diver maintain a vertical position on the surface. Available in yellow or blue with CO<sub>2</sub> and LP inflator. \$178. SeaQuest, 722 Genevieve Street, Solana Beach, California 92075.



**3 Pony Tank** — For extreme conditions where an extra reserve of air may be required. At 2015 psi, the aluminum pony provides 14 cubic feet of air, nearly double a normal J valve reserve. It's 4 3/8" in diameter, 19 1/4" long and is easily attached to the main tank. \$104. From Dacor. At your local dive shop.

**4 U/W Magnifying Glass** — Makes reading gauges and spotting tiny creatures much easier. It is attached to the outside of the faceplate and comes with a do-it-yourself kit, including cement and instructions. \$15.95. (Calif. residents add 6% sales tax.) From Libra Optics, Box 871, Redondo Beach, California 90277.

**5 Bottom Timer** — The first fully automatic underwater stopwatch is now being offered in three dial-face colors: black, high-visibility orange and diver's blue. Other new features include a chrome-plated brass winding stem and a tougher outer cover. \$49.95. From Princeton Tectonics, Box 764, Hightstown, NJ 08520.

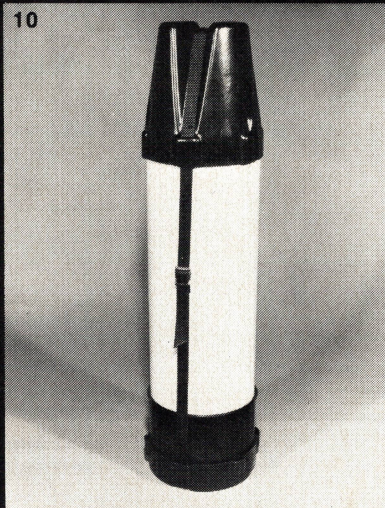
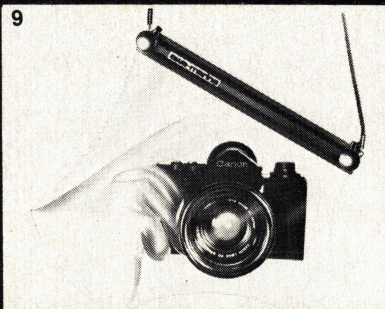


**6 Modular Instrumentation** — Builds any combination of combos or consoles. A mix-and-match system allows you to custom design your own instrument package. Back to back and double face combos, \$91.50 each. Navigator console, \$129.50. Price includes gauges. From Farallon/Oceanic. At your dive shop.

**7 Reef Dwellers 1979 Calendar** — With 13 exquisite color photos by award-winning U/W photographer Feodor Pitcairn. Each unique marine life study is 10 1/2 by 10 1/2" and suitable for framing; calendar pages are attractively designed. \$6.95. From FeoPhoto, Inc., Jenkintown Plaza, 6th Floor, Jenkintown, PA 19046.

**8 Pelican Box** — A tough, waterproof, O-ring sealed container designed to take dive bag abuse while protecting personal and emergency items, camera accessories, etc. The handy box comes in bright yellow with an unbreakable mirror and name plate. \$9.50. From Pelican Products. Available at your dive shop.

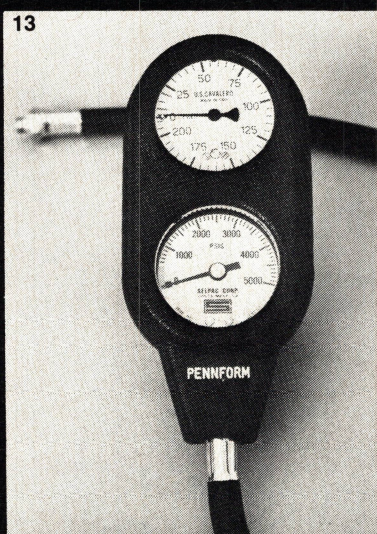




**9 Ewa-Marine Flexible Camera Housing** — Protects your camera from sand, water or dust. The tough, double-laminated plastic bag has two optical glass lenses and is closed by waterproof stainless steel rails. Pressure tested to 30 feet. About \$50. From Pioneer & Co., 900 Hadson Avenue, Collingswood, NJ 08101.

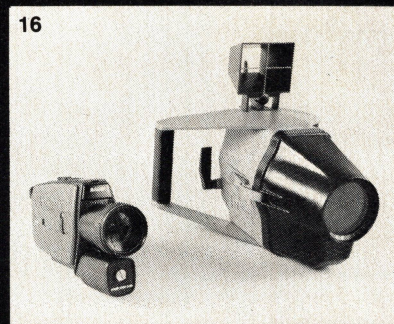
**10 Scuba Tank Cover** — A thick, rigid, high-impact polyethylene cover to protect scuba tanks during transportation. It protects the valve against damage or accidental air loss and is handily secured with a heavy duty nylon strap. \$28.95. From Ambec Corporation, P.O. Box 1004, El Dorado, Arkansas 71730.

**11 Liebhazet I Proton Magnetometer** — Used on the surface from a non-ferrous towed craft, it can locate shipwrecks in 70 to 120 foot depths. With one-third gamma sensitivity, it makes highly expensive marine search equipment unnecessary. \$350. From M. L. Dalton Research, 6035 Aberdeen, Dallas, Texas 75230.



**12 Kleerguard Defogger** — A new non-abrasive chemical formula for faceplates and eyeglasses. This miracle wax prevents fogging U/W up to 48 hours and comes in a handy one ounce plastic container. \$3 each (\$6 for three) plus \$1 handling. From Staten Gift Shoppe, 203 Freedom Ave., Staten Is., NY 10314.

**13 Gauge Console** — A convenient package which includes the Selpac 5000 SPG and the Cavalero 350 oil-filled depth gauge assembled in a handsome Pennform molded console case. It comes in black, blue, red or yellow. \$110.50. From Selpac Southeast, 3020 Adriatic Court, Norcross, Georgia 30071.



**14 Women's Shorty Suit** — A stylish, exceptionally clean-looking, shorty wetsuit in the new "bathing suit" cut. Men's styles feature somewhat longer legs. It comes in black, blue, or orange, 1/8 inch nylon II, with contrasting stitching. \$60. Available in several sizes. At your Imperial dealer.

**15 Eyeglass Holder** — A stainless steel spring wire to hold your own prescription glasses comfortably on the bridge of your nose. It's easy to use and fits most oval and round facemasks. Simply remove the temple pieces and lock wire loops over the hinges. \$2. From Dan Avers & Assoc., Box 11429, Chicago, IL 60611.

**16 Bauer Aquarius U/W Housing 8** a special housing for Bauer movie cameras. Pressure tested to 165 feet, it features four stabilizers with two side-mounted handgrips, a distortion-free front window, a cross-hair viewfinder, and a close-up rod for macro work. \$249.50. At most photo equipment shops.



# BATTLE OF THE

In May of 1978 I received a package containing three ounces of an ugly, black liquid that smelled so vile it would gag a maggot. It was a "gift" from the Delaware Valley Diving Council (DVDC) and an accompanying letter explained that the enclosed filth was a sample of ocean water taken at a depth of 70 feet off New Jersey.

The foul-smelling sea water was part of the DVDC's publicity barrage in a "battle of the sludge" that is making news headlines along the northeast coast of the United States. It is a lopsided war that has all of the aspects of a modern David fighting a giant Goliath. On one side is a massive governmental bureaucracy consisting of the federal Environmental Protection Agency and various East Coast municipalities. On the other is the tiny DVDC which consists of approximately 4300 members from 27 dive clubs and supporting organizations such as the Audubon Societies and the Sierra Club.

Lewis D. Panetta, president of the DVDC, wrote that the stinking sea water samples were mailed to 170 editors, legislators, congressmen and environmentalists all over the country — and it proved to be one of their most successful strategies. The purpose was to discredit EPA contentions that sludge dumped into the ocean is "dispersed and diluted" by winter storms and in the absence of a thermocline, a combination which is supposed to produce a "mixing" of surface and bottom water.

A letter accompanying the samples states that they were collected in February, 1978 during sub-freezing weather and immediately after one of the worst storms of the season. Council divers John Nihoff and Peter Meyer did the collecting from aboard Mick Traski's converted Coast Guard vessel, *The Kiwi*. A

news reporter was along to verify the authenticity of the samples and the location from which they were taken. Thus the EPA's theory of "dilution and dispersal" was proved to be pure hogwash.

The EPA also contends that sewage sludge is "harmless" to marine life and some of the more outspoken sludge-dumping apologists actually claim this crud is "beneficial" to saltwater organisms. The mayor of New York was quoted as calling sludge the "elixir of life" to ocean creatures. Carmen Guarino, water department commissioner for Philadelphia, testified that, "[sludge] is a sign of progress and every pound of sludge is an indication of more progress."

An analysis accompanying the DVDC's samples stated that the water contained excessive amounts of: cadmium, chromium, copper, lead, mercury, nickel and zinc. The sediment in the bottom of the sample contained heavy concentrations of all of the above, plus: arsenic, aldrin, chlordane, dieldrin, endrin, heptachlor, DDD, DDE, DDT, lindane, and toxaphene. All of these have been documented as lethal to marine organisms in very small concentrations. These poisons are also banned from ocean dumping by the federal law that EPA is mandated to enforce. Thus, the EPA's most often repeated refrain, that sludge is "harmless" to marine ecosystems, was exposed as pure bureaucratic baloney.

Last, but not least, the EPA and other sludge-dumping apologists claim that the sediment deposited on the sea floor is confined to a relatively small area and is no threat to other sections of the ocean or to East Coast beach communities. They ignore the fact that most public beaches are closed at least part of the summer due to contamination.

The DVDC has collected similar

samples of the slimy ooze called "black mayonnaise" all over the New York Bight, which analysis disclosed to be just as lethal as the mailed-out samples. Thus, another of the EPA's contentions was exploded as myth.

The sludge-sample story was widely reported by newspapers and magazines, the DVDC was inundated with congratulatory letters from scientists, environmentalists, public officials, United States senators and congressmen — but the EPA remains unshaken in its sludge dumping policies and regulations. The dumping continues at the same locations and the EPA continues to broadcast the same, thoroughly discredited propaganda, that sewage sludge is "harmless."

This is nothing new. The East Coast "battle of the sludge" has been underway since the EPA was given responsibility for regulating and enforcing water pollution laws. Chief among these laws are the Federal Water Pollution Control Act Amendments of 1972 which mandated the elimination of waste discharges into fresh water — and the Federal Marine Protection and Sanctuaries Act of 1972 which mandated that the dumping of wastes in the ocean that are harmful to marine life be discontinued and that all ocean dumping be stopped by 1981.

The law directed the EPA to designate ocean dumping sites beyond the edge of the continental shelf wherever feasible; and that ocean dumping which would adversely affect human health or the marine environment — including wildlife, shorelines, and marine ecosystems — be ended immediately.

These provisions of the law were completely ignored by EPA Region II (New York) and Region III (New Jersey), which regulate dumping in the New York Bight, an area of ocean that lies between Cape May,



# SLUDGE

BY BILL BARADA

New Jersey and Montauk, Long Island and extends out to the edge of the continental shelf, a distance of about 100 miles. The entire bight is around 11,000 square miles, about the size of New Jersey.

By 1974 about two billion gallons of raw or partially treated sewage, combined with toxic chemicals and industrial wastes, were going into rivers that flowed into the bight. Coastal communities added additional millions of gallons each day through outfalls. About five to six million cubic yards of sludge extracted from these sewage treatment plants was barged into the bight each year and dumped at two locations. One was 11 miles off New York, the other about 40 miles off Cape May, New Jersey. Millions of tons of construction rubble, acids and other junk were also dumped in the bight along with around 100 million cubic yards per year of crud dredged from New York Harbor and dumped by the U.S. Army Corps of Engineers. The dredged material volume is greater than all the other dumping combined and is as contaminated as raw sewage.

Despite earlier scientific studies which found that 40 years of dumping at the New York site had spread a blanket of sludge residue all over the bottom of the bight, and that this material was loaded with toxic metals and pesticides which were killing lobsters, clams and crabs and creating millions of sick and diseased fish — the EPA continued to issue permits for close-in dumping on the continental shelf (in violation of federal law). A number of respected scientists and oceanographers warned that ocean dumping had converted the bight into a time bomb that needed only the right set of conditions to explode into a major disaster. They said pollution may have already surpassed "the point of no return" but that

continued sludge dumping would virtually guarantee a disaster.

The EPA's only concession to these studies, and to federal law, was that highly poisonous industrial chemicals were moved to a dump site 106 miles offshore on the edge of the shelf. Reliable informants tell me that EPA's lack of concern for ocean dumping was because its enforcement efforts were concentrated on the construction of multi-million dollar sewage treatment plants (which are 75 percent federally funded) and ocean pollution was not "politically important."

The new treatment plants will triple the volume of sludge to be dumped, however, so the EPA hedged its bet by initiating environmental impact studies of alternate sludge dumping sites. The only alternates studied were on the continental shelf and within the bight. Off-shelf dumping at the chemical site was never seriously considered. The official EPA position justifying this was that dumping 106 miles offshore was too expensive — and the environmental effects at this location are "unknown."

The EPA has never explained how environmental effects can become known without being studied — or how they justify dumping highly toxic chemicals at this site which are far more hazardous.

At any rate, nobody was surprised when the EPA-backed studies produced the same data as previous, independent studies. The difference, however, was that the EPA Environmental Impact Statement (EIS) interpreted these data to show that sludge is actually beneficial to marine life.

(It should be noted that although these studies were made by private firms, and university teams, they were funded by the federal agency and the data were interpreted by

EPA bureaucrats. It is a sad commentary on the status of our scientific community that you can purchase a study to confirm almost any preconceived notion you are willing to finance.)

The pollution time bomb exploded in the bight during the summer of 1976 (SKIN DIVER, June 1977). Marine life in a 3000 square mile area of ocean was annihilated in the greatest pollution-caused disaster in United States history and the third worst in the world. Divers discovered that a black, slimy ooze had blanketed the sea floor and coated the hulks of sunken wrecks. Fishes, lobsters, clams, scallops and mussels died by the millions. Nothing in the infected area survived. Even sea worms, one of the toughest of all sea creatures, crawled out of the sand and died.

Most of the devastation occurred beneath a thermocline and was confined to bottom layers of the ocean, out of sight of surface observers. But as the death-dealing plague moved southward, it brushed the shore of popular bathing beaches. The surf turned black with crud. Waves vomited dead fish onto the sand. Beaches were inundated with unspeakable offal and an abominable stench permeated homes, restaurants and hotels. Visitors packed up and went home. The tourist season died.

EPA officials found themselves boxed into a corner. Admitting that ocean dumping was a prime cause of the holocaust could lead to charges of gross negligence, and moving the sludge dumping sites could be construed as an admission of guilt. Continuing to insist that sludge dumping is harmless, however, could produce continued and even more devastating disasters.

The bureaucracy was undaunted. They initiated more studies, and, amazingly, not one of



# BATTLE OF THE SLUDGE

these studies found that sludge dumping was anything more than a minor contributing factor. The consensus of opinion, according to EPA propaganda, is that the 1976 fish kill was basically a natural phenomenon brought on by abnormal atmospheric and hydrographic conditions in the New York Bight. They admitted that pollutants in the bight waters may have aggravated the "problem" by providing nutrients which triggered an algal bloom, but contended these came from the discharges of raw sewage into rivers. (A justification of treatment plant construction.)

This propaganda has been repeated over and over again and still continues today. At a public hearing in May of 1977, Peter W. Anderson of EPA, Region II, testified, "Sewage sludge is not among the major sources of plant nutrients; indeed this is why it has little inherent value as a fertilizer. All of the major nutrients and trace elements must be added to sludge to make it comparable to commercial fertilizers."

This statement should prove fascinating to European countries which have been utilizing composted sludge in basic agriculture, wasteland reclamation and horticulture for more than 40 years. It should also come as a surprise to agricultural scientists in Missouri who found that substantial crop-yield increases have resulted from the sole use of compost as compared to chemical fertilizers.

It is also interesting to note that extensive studies of massive fish kills in freshwater lakes, and in salt-water bays and estuaries, have produced conclusive evidence that sludge exerts a terrific oxygen demand on overlying water and when it is stirred up, or adverse weather conditions are encountered, fish kills result. These studies all agree that the direct cause of these fish kills is a lack of oxygen. But they point to oxygen-demanding sediments as the basic cause and weath-

er as merely a contributing factor.

In the New York Bight, however, the EPA claims these scientific truths are reversed and that "natural causes" are the culprit causing the fish kills, which is like saying that the cart is pulling the horse.

This is the situation that divers in the DVDC and its coalition members were up against when they set out to stop ocean dumping. The incredible success they have achieved so far is not only a credit to these skin divers and their organizations, it is a monumental example of what dedicated citizens can accomplish by openly challenging a powerful, bureaucratic juggernaut.

We can only list a few highlights of their activities and have selected those which show how divers can play a key role in protecting our underwater playgrounds. The major weapon of DVDC divers was eyewitness accounts graphically describing bottom conditions that discredited EPA propaganda. The divers "did their homework" and supported their observations with scientific evidence so they could not be accused of "just sounding off." A massive publicity and public education campaign was launched through newspapers, television, radio and magazines. A few samples are:

DVDC president, Lewis D. Pannetta, read an ocean dumping editorial on TV Channel 48 every day for an entire week. Council divers — such as Peter Meyer, John Nihoff, Dr. Richard Rauch, Dr. Karen Boot, and others too numerous to name — wrote letters to editors, guest editorials and articles; testified at public hearings; appeared for interviews on local TV and radio programs; participated in protest marches wearing dive gear; and collected water and sediment samples for analysis.

A few of the bottom conditions described were: gruesome stories of diseased fishes, lobsters with discolored shells that smelled of sewage when broken open, black-

ened crabs staggering erratically over the bottom, and clams with shriveled purple meat in the shells. These findings were documented by scientists from the National Marine Fisheries Service and other organizations.

The sludge which EPA and ocean dumpers insist is confined to a small area until it is "harmlessly dispersed and diluted" was traced over tremendous areas of the bottom. These observations were confirmed by such authorities as Capt. James L. Verber of the U.S. Public Health Service who testified that the sludge was spreading and recommended closing 142 square miles of shellfish beds near the EPA Region III designated dump site, 40 miles off New Jersey. The far-reaching spread of sludge was later confirmed by sophisticated methods used in offshore oil exploration. These disclosed that the shelf consists of shallow ridges and valleys, and that the valleys are loaded with slimy sludge sediment while the ridges are clean.

DVDC divers reported finding "greenish mats of ooze blanketing the bottom that were so infested with tiny worms they looked like a living carpet." EPA oceanographer, Donald Lear, confirmed this reporting that worm-like organisms were discovered that thrive on sludge and are found only in polluted areas of the bight.

The DVDC also discredited EPA's contention that the 1976 fish kill was a "once-in-a-lifetime occurrence" by documenting that at least three massive fish kills had occurred in the past ten years, each one worse than the last.

The drumfire of publicity generated massive letter-writing campaigns to federal legislators and top EPA officials in Washington. The EPA responded with public hearings at which their age-old refrain that sludge is "harmless" was repeated again and again.

Although the DVDC campaign had little apparent effect on EPA



brass, it had a tremendous impact on local citizens and officials. As a result, of the almost 100 municipalities that were dumping sludge in 1977, only two, New York and Philadelphia, are still dumping in 1978.

The total volume of sludge dumping has decreased very little, however, because New York and Philadelphia are the giants of sludge production — and their volume will triple by 1981. As Dr. Marwan Sadat of the New Jersey DEP stated, this demonstrates that, "It is relatively easy to get minor ocean dumpers and small industries out of the ocean. . . ." Camden and other New Jersey municipalities are composting their sludge and state officials are proclaiming that the product, "Gardenite," will convert the Garden State into "the compost capital of America."

Virtually every city and state on the East Coast is now blasting EPA for permitting New York and Philadelphia to continue dumping at the same close-in sites. The EPA has refused to force these cities to move to the 106 mile site, despite demands from other municipalities, on the flimsy grounds that the longer haul is "too expensive" and "environmental effects are unknown."

In 1976 Maryland sent EPA studies estimating a clam harvest in the vicinity of the Cape May dump site of 120,000 bushels worth \$420,000 per year. The EPA ignored this study, using in-house estimates showing "insignificant" harvests. The actual harvest in the first three months of 1978 was 127,000 bushels worth \$382,000 — despite the closing of 142 square miles due to bacterial contamination from sludge. Yet Philadelphia continues to dump at this site with EPA blessing.

The prospects of forcing Philadelphia to discontinue sludge dumping are so dismal that environmental organizations have taken the case to court and the DVDC has joined in the legal battle.

Philadelphia has been under orders to upgrade its sewage treat-

ment since 1968. The city has avoided compliance through a history of appeal, delay, sham negotiations, and every other trick it can dream up. As a result, according to EPA, Philadelphia's drinking water supply is one of the most contaminated in the United States and it is suspected that the high rate of cancer found in the city is due to this contamination.

Philadelphia accepted federal funds for the construction of sewage treatment plants. Work cannot begin at one site because the Street Department dumped a million tons of trash and junk on the grounds and Philadelphia is demanding that EPA finance its removal. Construction at another site is stopped because the city has dumped 290,000 cubic yards of highly contaminated sludge into lagoons on these grounds. Philadelphia is demanding that EPA finance, and approve, spreading this toxic, uncomposted filth over Fairmont Park.

The city does not monitor its effluent for toxic compounds, and is not required to do so by EPA, thus the extent of illegal dumping of chemicals into the sewer system is unknown. (Analysis of Philadelphia's sludge dumped off Cape May showed that the amount of toxic metals dumped each year is: 192 pounds mercury, 7787 pounds cadmium, 2,333,856 pounds lead, and 845 pounds of arsenic.)

In 1977, a court found Philadelphia guilty of violating requirements of its ocean dumping permit and fined the city \$225,000. The city has refused to pay.

Confirmation of Philadelphia's attitude is found in testimony by Carmen Guarino, the City's Water Department Commissioner, at a public hearing in June, 1977. He calls the spreading of contaminated sludge on Fairmont Park "a major breakthrough." He parrots the EPA refrain of no environmental damage from dumping at the existing site and warns that moving to the 106 mile site would cost the city an ad-

ditional \$5 million per year. Dr. Marwan Sadat of New Jersey testified that this extra cost would be a great incentive to induce Philadelphia to find cheaper, alternate disposal methods.

Guarino complained of EPA harassment and persecution which resulted in the \$225,000 fine. He also testified that, "I and my associates in the City Water Department have perhaps investigated more potential processes for the handling of sludge than anyone in the United States." He said he had spent 27 years in trying to clean up the waters of this country.

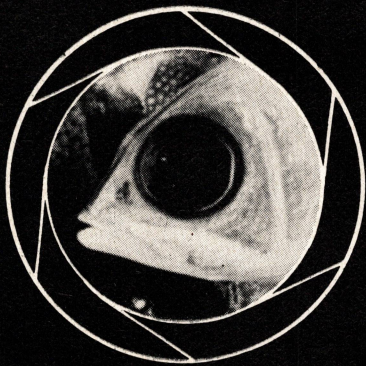
DVDC divers suggest that Guarino admit he is an abject failure and resign so a competent administrator could take over his duties.

Thus, although the DVDC has achieved some remarkable successes in its "battle of the sludge," the final outcome is far from being determined. The stakes are high. Not only is the New York Bight threatened with annihilation as a sport diving playground, but perhaps all coastal communities of the United States are faced with a similar sewage pollution problem. For example, although Southern California cities can correctly claim they do not dump sewage sludge into the ocean from surface vessels, the crud is still wreaking havoc with marine life. In this case, and in most other coastal areas, sludge from treatment plants is delivered to the sea via outfall pipes.

Lewis Panetta writes that the DVDC needs help. Its finances are depleted and it is faced with potential bankruptcy which would force it out of the fight before it is finished. This would be a disaster for sport divers everywhere because the bight is a test case which will determine if citizen action can force the EPA to enforce the laws governing ocean pollution.

For more information write: Delaware Valley Diving Council, Post Office Box 214, Runnemede, New Jersey 08078. >





# Beginners' Course In U/W Photography

BY JIM AND CATHY CHURCH

## LESSON XI: SHOOTING AN U/W SLIDE SHOW

**T**he purpose of this lesson is to help you develop new and exciting slide shows by adapting movie-making techniques to your still photography. We assume that you are an experienced U/W photographer, so we will concentrate on shooting techniques rather than the mechanics of equipment and exposure estimates.

### BUILDING CONTINUITY

A good slide show has continuity — the slides are arranged in a logical, smooth-flowing order so each slide leads the viewer to the next. The show will consist of a group of related sequences, usually of three to five slides each. Each individual sequence is a "mini story" which will be joined with the others to form the total story.

### TAKE THEM DIVING

If your audiences will include non-divers who are not familiar with your underwater world, you can use your show to "take them diving."

Begin with a sequence of above-water slides to establish the scene and action. Show the dive area or boat, and follow with slides of divers donning their gear and entering the water. You can take your audience below the surface with upward shots of divers breaking through the surface above, and with silhouettes of divers heading for the bottom. A slide of a diver settled on the bottom, or slowly swimming over the bottom, can end these introductory sequences smoothly.

Now that the audience is attuned to the underwater setting, you can use

several related sequences to show the activities of divers and other subjects. You can show a diver examining an anemone to establish size perspective, and follow with close-ups of the anemone's delicate tentacles. This is when you dazzle them with your colorful close-ups.

If you have a significant change in location — say from Hawaiian waters to the California coast — establish the new location with a strong sequence to make the transition. Otherwise, radical changes in background, dive equipment or marine life can upset continuity and confuse the audience.

The final slides should lead to a natural ending. If you started with divers donning gear and entering the water, you can end with divers leaving the water and removing gear. These final slides should complete the story.

photographs by Jim and Cathy Church



*Exciting slide shows can be developed by applying movie techniques to still photography.*

### HOW SEQUENCES ARE CREATED

Sequences are usually created with three basic shots: the long-distance shot (LS), medium-distance shot (MS) and the close-up shot (CU). These shots are usually used in the following order:

1. The LS begins the sequence by establishing the location and often provides size perspective between the subject and its surroundings.

2. The MS gives a closer look at the subject or action, but without unnecessary background and other distracting details.

3. The CU focuses attention on the most important part of the subject or action.

4. Another MS or LS is often used to reestablish the scene and/or end the sequence.

The designations — LS, MS and CU — are relative to the size of your subject and the action shown. If the sequence features divers, the LS would probably be a wide-angle lens shot showing two



or more divers. But if the subject is a tiny hermit crab, the LS might be taken with a close-up lens, and the following MS and CU shots with a more powerful close-up lens or an extension tube.

Changing camera angle when you move from one shot to another often adds interest to the sequence. But be careful of changes in direction: If a diver is shown swimming from left to right, and this direction is reversed in the following slide, this change could break continuity and confuse an audience.

While the progression — LS to MS to CU — is basic, you can modify the progression of shots to fit your needs and subjects. You might add extreme long-distance shots (ELS), add extreme close-up shots (ECU), use more than one shot at any distance, or may omit one of the shots if it isn't needed. Your main goal is continuity: The sequence should flow smoothly, and have a beginning, a middle and an end.

### CUT-IN AND CUT-AWAY SHOTS

A cut-in shot cuts into the main action of the sequence. For example, in a sequence showing a diver hand-feeding fish, a CU or ECU of just the fish's eyes and mouth can be inserted between longer-distance shots of the diver and fish together. Or if the sequence shows a diver examining a shell, a cut-in CU of the shell shows the diver's view of this small subject.

A cut-away shot cuts away from the main action. For example, a MS of bubbles floating gracefully upward in mid-water can be inserted between slides showing divers with prominent bubble streams. However, be careful that the cut-away shows a subject or action (such as the bubbles) that the viewer can relate to the main action.

### TRANSITION SHOTS

A transition shot, or slide sequence, bridges the gap between sequences showing different subjects. For example, a LS of a diver swimming can be used as both a resolving shot to end a sequence featuring the diver, and as a transition shot to prepare the viewer for a change of subject. If the viewer is "moved" to an entirely new location, the transition will require a sequence of slides and sometimes a title slide.

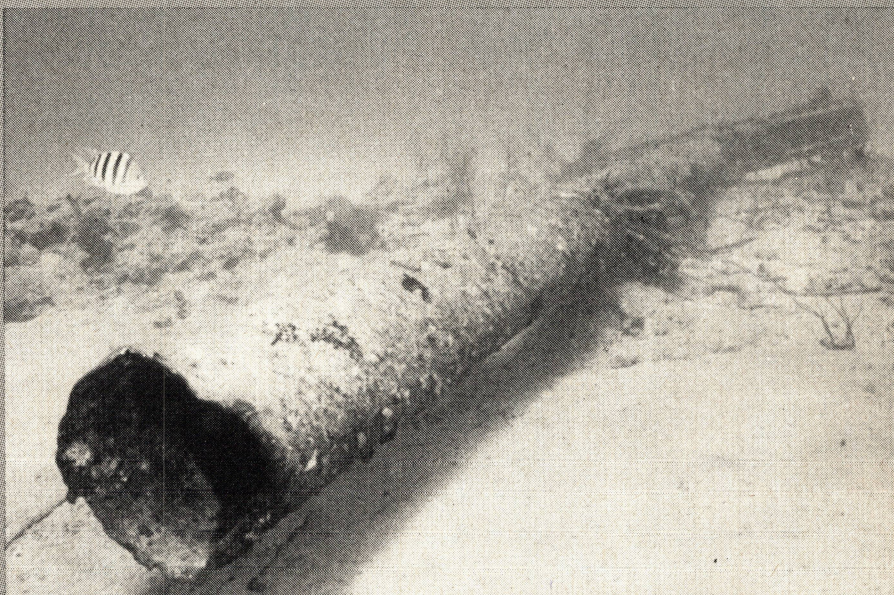
### PLANNING YOUR SLIDE SHOW

Now that you've reviewed the basics of sequence and continuity, it's time to examine the slides you already have. Use a light box or slide sorter (available at camera stores) to sort your slides into related groups. Look for natural sequences — the feather duster worm with tentacles extended, and the same worm with tentacles retracted — that you can build on.

Ruthlessly eliminate any slide that is poorly focused or exposed — nobody

wants to see your junk slides!

Place your selected slides within slide pages (plastic pages which have pockets for holding 20 35mm slides) so you can pick up the page and view several slides at once. Leave empty pockets for the missing slides you must shoot to complete your show. As you decide exactly what shots you need, write descriptions of these needed slides on small pieces of paper and put the papers in the empty pockets of the slide page. These notes



1. An extreme long-distance shot (ELS) of the ship's mast establishes the opening scene.

not only remind you of the shots you need, but also help you visualize the continuity of your show.

If a great number of slides are needed, try making stick figure drawings, and writing short descriptions, on 3 x 5 inch file cards. This is a flexible method of organizing your ideas because you can add, delete or change the order of cards at will. In fact, every paragraph of this article began as notes on a file card.

It all boils down to this: You should end up with a list of specific slides that you can take with your equipment at the locale you dive.

### PLANNING PHOTO DIVES

Ideally, you should be able to dive each site more than once so you can work the site with different lenses. It is difficult to concentrate on more than one kind of U/W photography at a time. If you take two or three close-up lenses and a wide-angle adaptor for your Nikonos on each dive, you usually end up with a collection of snapshots because your efforts are split into too many directions. Remember that you arrange your slides into sequences, but you don't always shoot them in sequence.

If you are at a resort where the dive boat goes to a different site each day, question the divemaster ahead of time so you will be prepared to work the main features and subjects which each

site offers. Group your shots whenever possible: If the site features walls, overhangs or tunnels, concentrate on getting the LS slides you need to begin and end sequences, and for transitions. If the site abounds with friendly fish, concentrate on getting MS slides of fish and divers and/or CU shots of fish. And if the site offers smaller close-up and extension tube subjects, concentrate on your CU shots. If your spouse takes U/W pictures, you can work the same subjects —

but with different lenses — to get the sequence shots you want.

### SHOOTING A SIMPLE NATURE SEQUENCE

You can begin a simple nature sequence with a LS showing the head and shoulders of a diver examining lush marine growth on a rock formation. The following slides would represent the diver's view. With a macro lens, you move in for MS and CU shots of sponges, tunicates, plume worms and small anemones. With a Nikonos, you could then shift to a close-up lens, and possibly return with an extension tube on a later dive.

### SHOOTING AN ACTION SEQUENCE

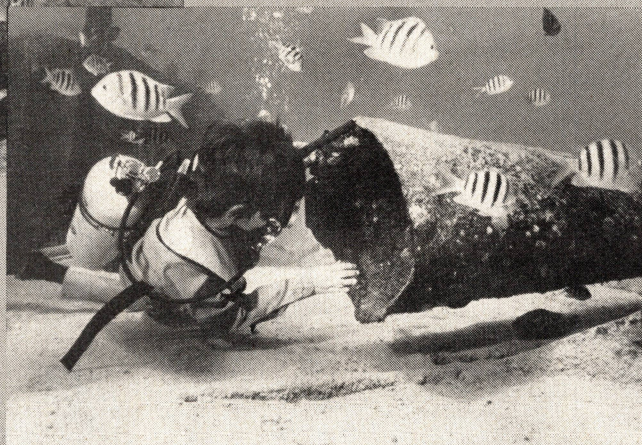
An action sequence can be made with slides taken on different dives, and sometimes at different locations (providing that dive gear, subjects and backgrounds are similar). As an example, we'll describe an action sequence that we are working on.

We dived on the sunken *Balboa* (Georgetown Harbor, Grand Cayman) with a specific purpose in mind: Elmer a large, friendly moray eel — was inside the hollow end of the ship's mast, and we concentrated on getting MS and CU shots of Elmer. Weeks later, we returned with a wide-angle lens to shoot





2. A long-distance shot (LS) of the diver approaching the mast starts the action. 3. A medium-distance shot (MS) of the diver peering into the hollow end of the mast develops the action.



an LS of the mast to establish a scene and some MS slides of Cathy approaching and looking into the end of the mast. Elmer wasn't there, but it didn't matter! We now had a sequence of slides showing a diver "discovering" a large eel. We end the sequence by dissolving Elmer off the screen with our two-projector dissolve unit. However, we've decided that we want a MS or LS of Cathy swimming away from the mast to end this particular sequence. We will have to go back on another day for this final slide. When this sequence is included in a slide show, who (except you) will know that the shots were taken months apart?

### SHOOTING DISSOLVE SCENES

A dissolve unit controls the light output of two projectors. It fades the projected image from one projector onto the screen as it fades the image from the other projector off the screen. This overlapping of images on the screen strengthens continuity because the slide sequences flow with a movie-like quality that is difficult to attain with a single projector.

The ability to fade one image into another opens the doorway to all kinds of creative ideas. You can now "manufacture" beginnings, transitions and endings by dissolving one slide into another. For example, find a scenic view that has strong angles or other dominant features such as an upward view of a kelp forest. Brace your body and camera and shoot this scenic view with and without a diver in the scene. You can now use the two shots to fade the diver into the scene to begin a sequence, or fade the diver out to end it.

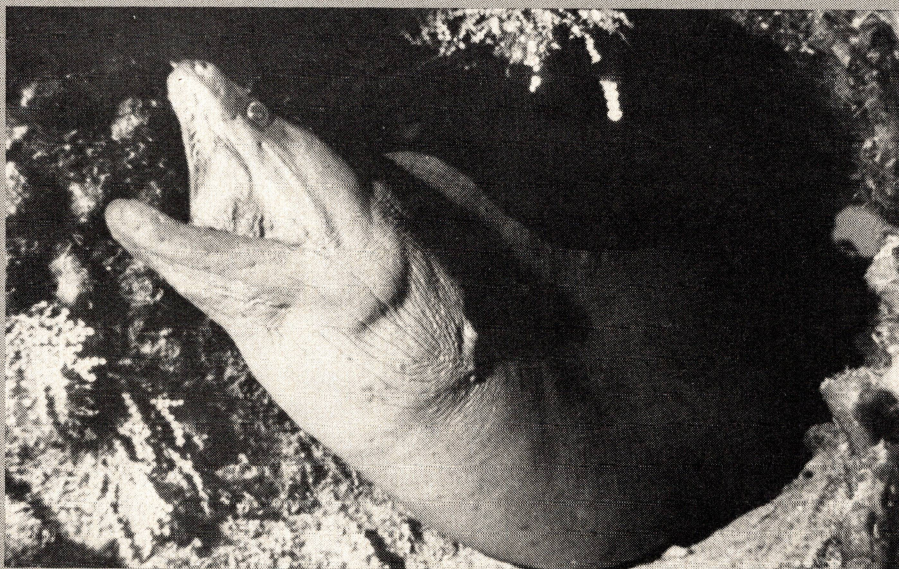
### GET SOME TOPSIDE SHOTS

Devote some time to getting the topside shots you need. If you are new to the area, and want some non-diving scenic shots, begin at the postcard rack. See what subjects and angles the local photographers used. Yes, you will want to shoot your own setups, but the postcards will give you ideas for potential subjects. Also, a selection of postcards could be used for making title slides.

Spend at least one dive concentrating on the topside activities associated with diving — boarding the boat, jumping into the water, handing camera gear over the side, getting out, etc. — to get those beginning and ending sequences that you need to "sew up" your story.



4. Another MS shows what the diver finds.



5. A close-up shot (CU) pinpoints our attention to the eel, residing inside the mast.



IF YOU CAN READ YOUR TITLE  
SLIDES AT YOUR NORMAL  
READING DISTANCE, YOUR  
AUDIENCE WILL BE ABLE TO  
READ THEM ON THE SCREEN.

*You can write directly on the title slide.*

## SHOOTING TITLE SLIDES

A slide of a sign or other such display is easy to shoot and can be an effective title slide. Begin with a CU of the sign to name the area and follow with a LS to establish the scene.

Check with your local camera store for slide titling supplies. Sets of titling letters can be placed over varied backgrounds, such as a map, photograph or montage of postcards, to create personalized titles. With some commercial title slide systems, you can write, draw and sometimes type directly on the title slide.

If you have a macro lens, try photographing titles typed on 3 x 5 inch file cards. For maximum sharpness, use pica type with a carbon ribbon. For maximum legibility, try shooting at a 1:2 reproduction ratio with a line length of about 24 to 28 spaces for pica and about 28 to 34 spaces for elite type. The key point is: If you can easily read a title slide when you hold it in your fingers at your normal reading distance, your audience should be able to read the projected letters from the rear of the room.

Exposing letters directly over color slides will require the use of a slide copier. Begin by photographing the title from a file card on Kodak High-Contrast Copy Film (which can be home-processed with Kodak D-19). This gives you a dark negative with white letters.



6. An extreme close-up (ECU) adds drama.



*A simple nature sequence could show the diver's view of certain marine organisms.*



*With a macro lens, you can move in for MS and CU shots of plume worms (above) and anemones.*

Double expose these letters over a color slide with your slide copier. If you don't wish to make your own titles over color slides, check the advertisements in the various camera magazines for companies which specialize in producing such title slides.

## LEARN ABOUT YOUR SUBJECTS

Learning more about your U/W subjects will help you take more exciting pictures. If you learn the names of the different marine plants and animals, and begin to recognize feeding, symbiotic, territorial and courting behavior, you will soon be shooting pictures which record events and behavior rather than simple portraits.

Consult your local dive shop for the fish identification books which are best for the area where you live or plan to dive. Some examples are: *Fishwatchers' Guide to the Inshore Fishes of the Pacific*

*Coast* (Dan Gotshall — N. American Coast); *Fishwatchers' Guide to West Atlantic Coral Reefs* (Chaplin & Scott); *Guide to Corals & Fishes of Florida, the Bahamas and the Caribbean* (Idaz & Jerry Greenberg); *The Living Reef* (Jerry & Idaz Greenberg — covers reef life of Florida, the Bahamas, Bermuda and the Caribbean); and *The Many-Splendored Fishes of Hawaii* (Gar Goodson). These, and other books which are available, will help you identify and understand your U/W subjects.

## FOR MORE INFORMATION

For more information about building continuity with slide sequences, purchase any of the inexpensive home movie books and apply these techniques to your still photography. For information about the mechanics of presenting your U/W slide show, read Lesson XII (December SDM). 🐠



A pair of eyes peeked around a frond of a nearby kelp plant. Sunlight hit the water's surface, shimmering and encompassing the tall columns of kelp. Suddenly I felt something soft glide over my shoulder. Two huge, round eyes stared into mine. Web-like claws clutched my mask. My regulator fell out of my mouth, my mask flooded and through the blur of cold water I saw blinding lights.

After purging my regulator and clearing my mask, I swam toward the flashing lights. There I found my dive buddies, Lew Trusty and Tom Cowell, madly taking pictures of a harbor seal tearing apart and eating an abalone.

We later found out that our Catalina neighbors, graduate students Jim Coyer and Jack Engles, were acquainted with this seal. They had been collecting specimens for their studies a few weeks earlier when a fat female harbor seal swam up and began to molest them. Jim and Jack noticed the seal had two fishhooks embedded in her neck and mouth. They held her and painstakingly removed the viciously barbed hooks. The seal had been friendly ever since. Jack and Jim named her Fishhook.

We were staying at the University of Southern California's Marine Science Center on Catalina, working on Lew's film *Silent Forest*. At the narrow isthmus near the center of the island, the Marine Center's buff colored buildings stand above Big Fisherman's Cove. The next morning, with an entourage of divers and grad students, we decided to try and capture Fishhook's antics for the film. As we looked out toward the blue-green water surrounding Isthmus Reef, we all felt today would be special.

One of the students had already reported that the visibility was over 150 feet. Our timing seemed perfect.

*Silent Forest* is a movie designed to illustrate the beauty and vitality of the kelp beds. Its aim is to show the importance of the web of life that exists in the kelp bed community today, so that human beings will protect this precious underwater resource in the future. We thought it would be a great idea to use Fishhook as a vehicle to communicate our message. We hoped the seal would cooperate with us.

I think Fishhook was waiting for Hollywood to discover her. As we settled down to the bottom of the kelp bed with cameras ready for action, she came up behind Tom and pushed her face into his. She hovered next to Tom as if in suspended animation. Every few seconds she would reach out and grab the sleeve of his wetsuit and give it a rough, but playful tug. Tom's face was filled with apprehension. Juggling his camera and two strobes, he tried to pet the seal. But every time he put his hand out she would grab his sleeve again. Suddenly she disappeared and swam around behind him. She began pulling on his hood, taking him toward the surface. Tom's dry suit was soon to turn into a wetsuit.

Fishhook then moved over and inspected Lew and the movie camera. She would peer at him and stick her nose into the camera lens.

Seals are mammals and have to breathe air. When Fishhook reached the surface, she would float there awhile hyperventilating and preparing to submerge again.

With a new supply of air, Fishhook was ready for another half hour of fun.

First, she would disappear behind a big rock — the beginning of her game of hide-and-seek. She would let us see her for a moment and then disappear again. As the divers spread out to look for her, she would pop out of various holes, scare us, and disappear again. Her splotchy gray, black, and white fur camouflaged her perfectly against the algae-covered rocks.

At a certain point we were all reminded that we weren't fish after all. Our pressure gauges told us it was time to head for the boat. Reluctantly, we all climbed aboard the boat and headed back to the marine lab. The expressions on everyone's faces showed the same emotions: exhaustion, wonder, curiosity, happiness and sadness combined. But, the film would show it all. We had fallen in love with Fishhook.

We returned to Catalina many times the following summer. Fishhook was nowhere to be found. Our friends at the lab said they hadn't seen her since early spring. In September we returned to the lab for three weeks. After several days, there was still no sign of her.

On the fifth day I spotted something in the distance that looked like a seal. I got Tom's attention and swam over. But no luck, the seal had disappeared. The next day I saw the same thing. This time when I swam toward it, it did not move. It was Fishhook! As I petted and hugged her, Tom's and Lew's strobes went off like fireworks on the Fourth of July. But something was different. Fishhook seemed aloof. She wasn't interested in us and didn't want to play. After a few minutes, she disappeared.

That evening we pondered Fishhook's behavior. Did she recognize us or not? Was she sick? We decided to try

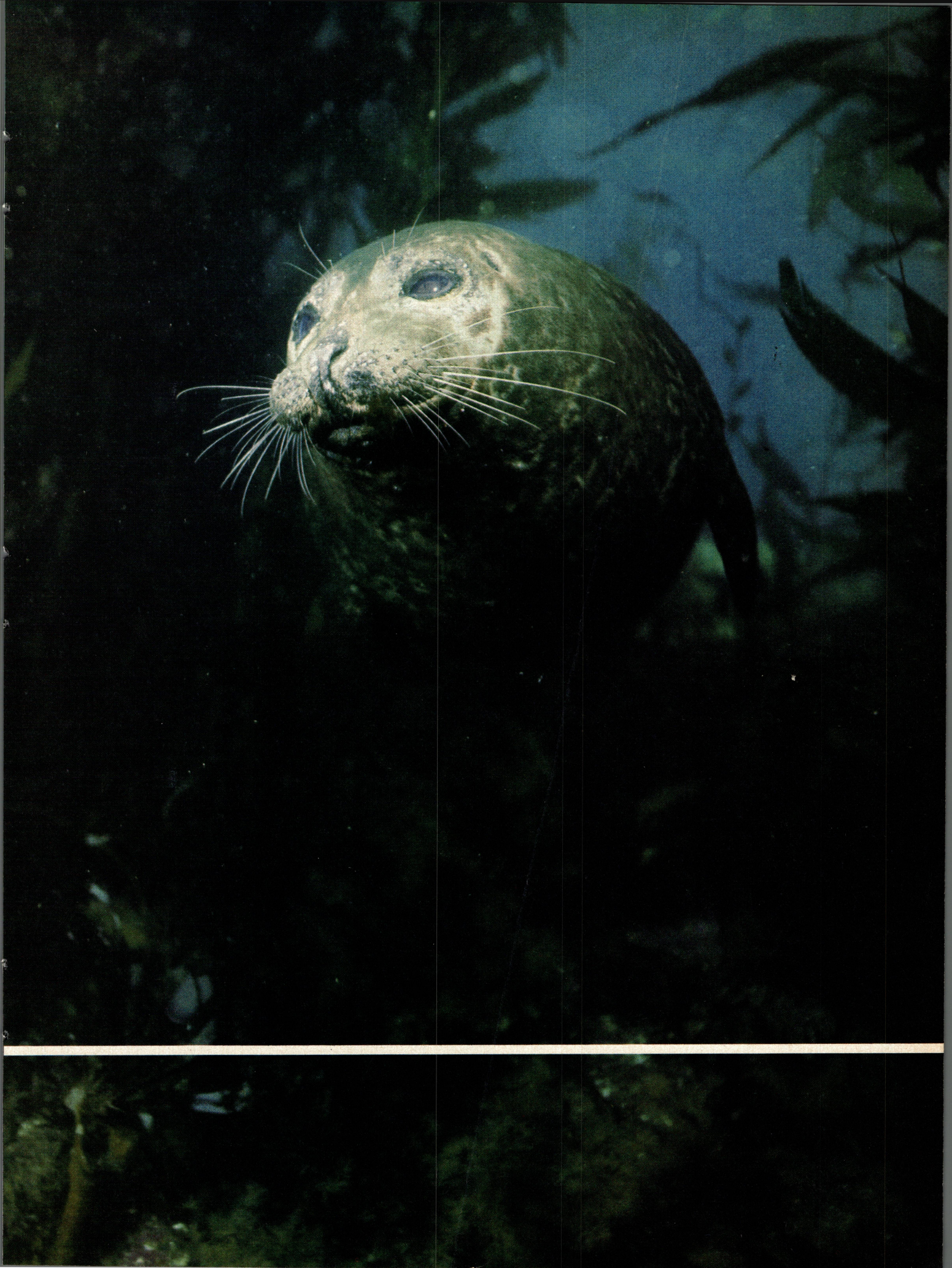
## A FRIENDLY HARBOR SEAL FROM CATALINA

BY CHRIS MEIER TRUSTY

photograph by Lewis Trusty

Fishhook







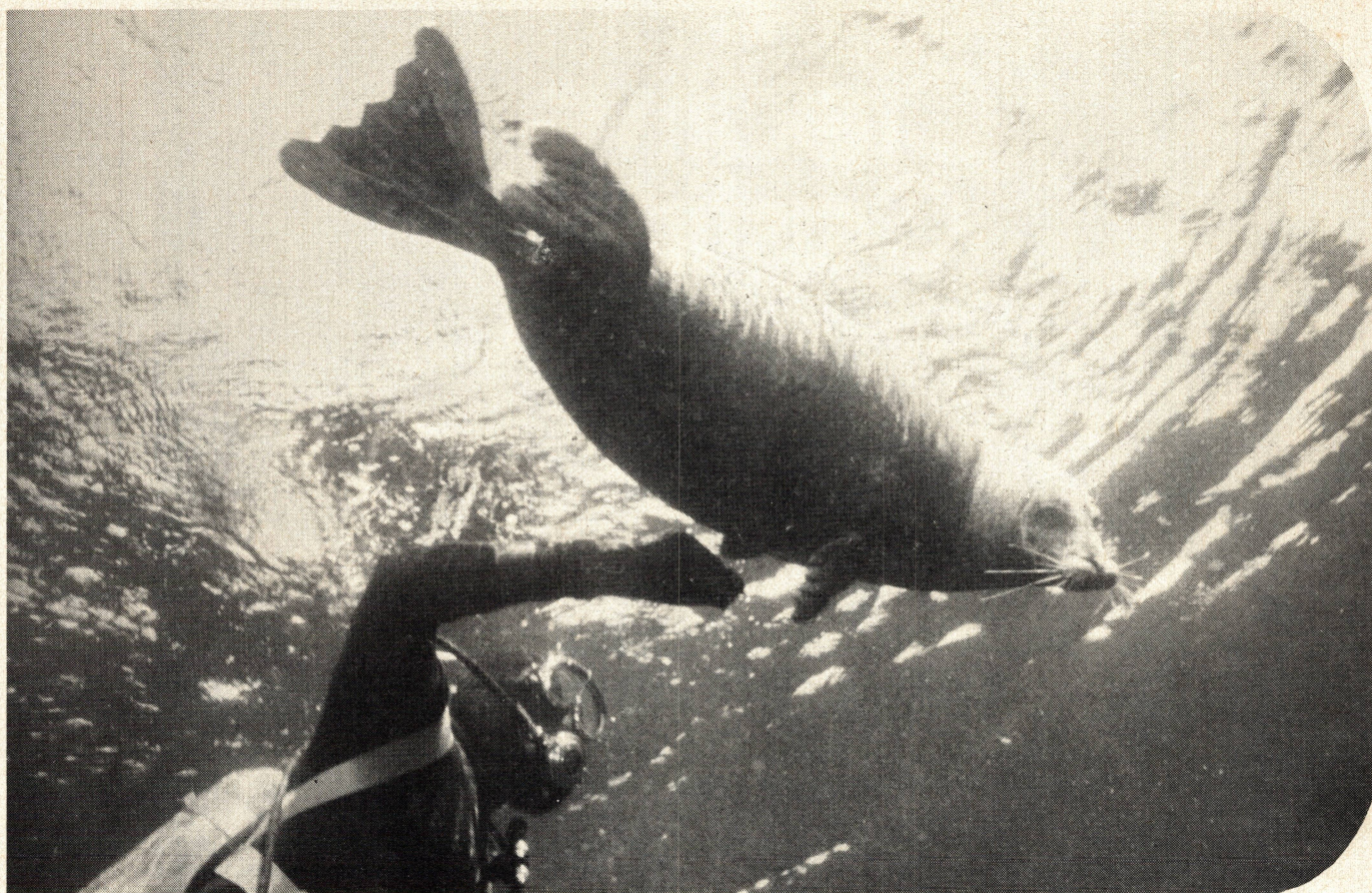
photograph by Thomas P. Cowell



photograph by Lewis Trusty







photograph by Lewis Trusty

again the next day. When we entered the water, Fishhook was there. She let us pet her again and then swam away. This time she kept turning around and looking at us as if she wanted us to follow. We did.

Suddenly she disappeared over a rocky ledge. When I peeked over the ledge, I saw her down in the same sandy area where I had played with her several months before. But, lying beside her was another seal, about two thirds her size and almost totally white. The timid white face had two huge puppy-like eyes and looked very frightened. We decided not to move any closer. We watched for a few more minutes, took a few pictures and then left them alone.

Harbor seals leave their usual haunts

to whelp their pups and mate again in the spring. They usually return when the pup is a few months old. Pups stay with their mothers for several months before leaving the nest. We think Fishhook was pregnant when we first met her. She left to whelp her pup and mate again. Now, she was introducing us to her baby and was probably expecting another pup in about nine months.

The following morning we slipped into the same familiar kelp bed. This time Fishhook was right there to greet us. Just a few yards behind her, peeking through the kelp, was the pup. We pretended not to see it. Fishhook played and snuggled with us like before and we began to frolic through the forest. The pup was always just behind us peeking through the kelp fronds.

After awhile Fishhook swam toward her pup. She turned and looked at us, then swam away. We did not follow.

Our relationship with Fishhook was very special. We did not want the pup to get too friendly with us. It needed to be afraid of humans for its own protection. Some fishermen kill harbor seals because the seals eat their fish.

Those days with Fishhook are a long time behind us now. But the memories of them will never leave. When we see the movie footage of Fishhook and the divers in *Silent Forest*, we relive every moment of the experience. And, every time we sail to Catalina we look again, but there is no sign of her. We did have an encounter with another friendly harbor seal near the same area. Perhaps it was Fishhook's pup. 🐾

*Fishhook*



# Creative Casting

*New Art Form For Divers*

*By Bonnie J. Cardone*



Anyone who keeps an aquarium knows that sooner or later some of its inhabitants will depart this life. My own marine tank is stocked with common crabs, snails and other little creatures, usually found while in pursuit of their larger, more edible relatives. Occasionally, one of these expires. Not infrequently, the deceased was someone's lunch.

It's an unhappy experience to find nothing left of your favorite creature but an empty shell or skeleton, but I have found a way to provide a decent burial — I cast the remains in resin!

Casting resin hardens into solid, see-through plastic. I have used it to preserve such former aquar-

ium residents as abalone shrimp, limpets, tiny starfish, barnacles, snails, crabs, sea urchin tests and scallops. Crab molts work very well, too, and casting resin makes an attractive base for a piece of coral. (Use small bits of dead coral which have broken off of larger stands.)

My first casting attempts were so pleasing that I started collecting empty baby abalone shells and other things from the beach or ocean bottom. If you don't have an aquarium or beach nearby, there are hobby, aquarium, hardware and dime stores where you can purchase seashells, tiny plastic fish and divers for use in your castings. You can also use dive



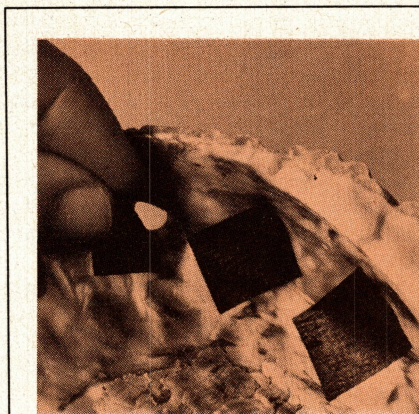
memorabilia: parts of a nonfunctional watch, a batch of used O-rings; a disintegrating snorkel tab; old regulator second stage parts; or worn-out camera parts. You're limited only by your imagination. If you're one of those people who hates to discard anything, you'll love resin casting.

The first step in making a resin casting is to be sure the object or objects to be embedded are clean and dry. Deceased creatures and crab molts should be put in a dry place, out of the sun, and allowed to sit for a few days. If put in the sun they will dry faster, but lose their color. I hasten to add that all of the creatures I use are tiny and yours should be, too, especially if you plan to dry them indoors!

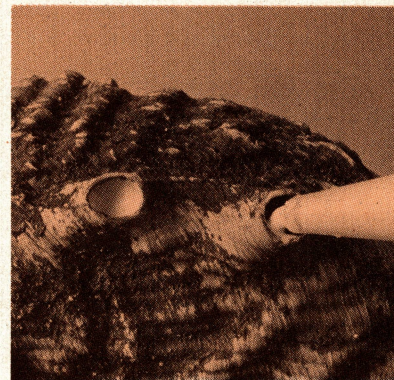
The next step is to choose a suitable mold. Casting resin heats up during the curing process and when it cools, it shrinks. Molds have to make allowances for this by expanding and contracting along with the resin. Otherwise, cracks and seams develop on the outside of the casting and it will have to be sanded and buffed. This is a very time-consuming, difficult process.

Sometimes you can find a desirable mold in a hobby store. I found a dome-shaped one that worked very well until it developed dents from use. Most often, you'll have to use something not originally intended for use in resin casting.

Hard plastic containers do not make good molds because they are too rigid. Soft, thin plastic molds will melt and stick to the casting. After much experimentation, I discovered that plastic freezer storage containers, available in the supermarket or dime store, work just fine — as long as the top of the casting does not come from the bottom of the container, which often has lines or other markings on it. These con-



*Abalone make nice molds. Clean the shell and press tape around the holes.*



*Fill the holes with white glue. When it dries, the glue will be transparent.*

tainers come in round, square, rectangular and pie shapes and in many different sizes. To see how well a potential mold works, cure a trial layer of resin in it first.

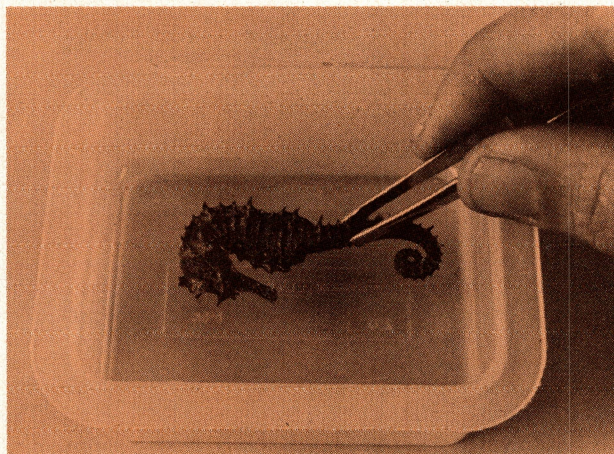
Another type of mold is one which becomes part of the casting. My favorites are abalone shells. Greens and pinks are good choices because the insides are so colorful. First, clean the shell. A good scrubbing is in order and if you don't like the growths on the outside, scrape them off. (Another reason for using green abalone is that these shells attract less marine growth than some of the other species.)

When your abalone shell looks the way you want it to, the next step is to fill the holes. Cover these with masking or other tape on the inside, pressing the tape tightly around each hole. Then, set the shell upright and fill the holes with white glue from the outside. Let this dry, remove the tape and your shell is ready to use. (You might also enjoy experimenting with scallop, clam or oyster shells.)

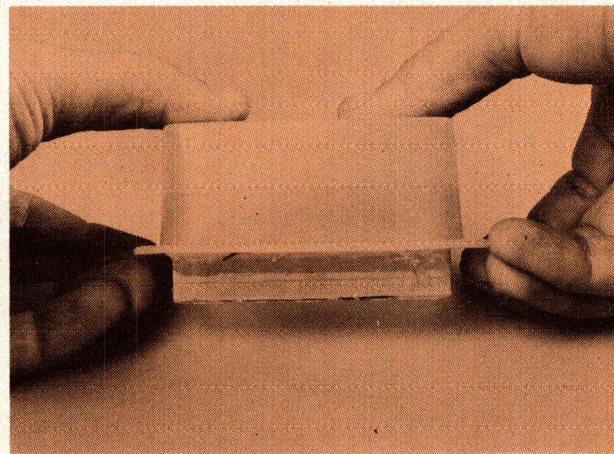
Once you have something to be embedded and the mold, the rest is easy. Casting resin is available in hobby and marine supply stores, in varying amounts. It is simply plastic in a liquid form which will harden by itself eventually. But to speed up this process, a catalyst — which comes in a small, separate bottle — is added.

When drops of the catalyst are mixed with the resin, a chemical reaction occurs which generates heat and causes the resin to harden. The amount of heat is proportional to the amount of catalyst added. The more catalyst, the more heat, and the faster the resin cures. Too rapid a curing, however, can cause the casting to crack.

The amount of catalyst used also depends on the room temperature and the size and thickness of the casting. Resin casting should be done in temperatures between 65°F and 75°F. And, the more resin used, the more heat generated and the less catalyst needed. See the accompanying Catalyst Chart to find out much catalyst to use.



*Tweezers can be used to insert objects into a resin layer. They allow for easier and more accurate positioning.*



*To unmold a casting, pull the edges away from the mold gently. Invert the mold, pressing on the top to release the casting.*



While curing, even a small amount of resin will emit strong fumes. Do your casting in a well-ventilated room, away from open flames and food.

Resin can be colored with special dyes which are stirred in before the catalyst is added. These come in many colors, either opaque or transparent. The opaque dyes produce a solid color. The transparent dyes tint the resin but you can still see through it. Depending on the number of drops used, the color can be as dark or as light as you wish. Avoid using too much dye because this can delay curing. These dyes can also be obtained at hobby shops.

Always mix resin in disposable containers with disposable utensils. Special plastic cups, graduated in ounces, are

sold for this purpose. I use a wax-coated or uncoated paper cup. (A plastic coated cup will melt.) To stir in the catalyst or dye, use a throw-away wooden spoon, tongue depressor, Popsicle stick or large toothpick. Thin plastic spoons or forks will melt. If you use a metal utensil, you will find that the resin clings to it and is almost impossible to remove: Resin coats whatever it contacts.

Spread at least three layers of newspaper in your work area, which should be flat. Resin becomes hard-to-remove lumps on counters and floors and *always* drips down the side of the can!

Once you have all your materials, you are ready to begin. The following steps will help you make your own, one-of-a-kind casting:

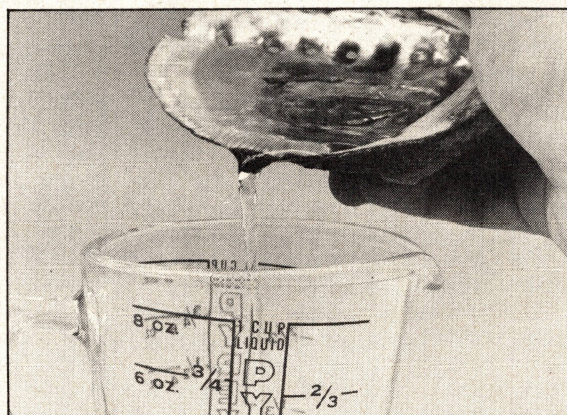
1. Determine how many ounces of resin you need for each layer. Each should be no more than one-quarter to one-half inch thick for the best results. You can decide how much resin you need by first pouring water into the mold to the desired depth and then pouring the water into a measuring cup. Be sure to dry the mold afterward.

2. Pour the resin into your paper cup in the desired amount. Then add the appropriate number of catalyst drops and stir until the mixture looks homogeneous. If you want to use a dye, add it now and mix well again.

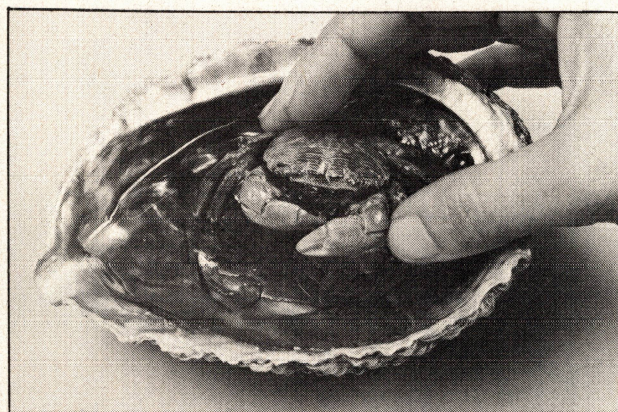
3. Pour just enough of the resin mixture into the mold so that it covers the bottom. Objects can either be put in the mold now, added once the entire first



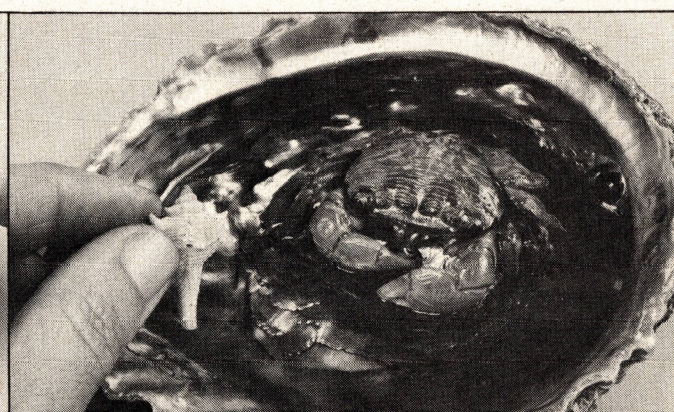
Before you begin any resin casting project, assemble your materials: molds and objects to be embedded; resin and catalyst; disposable measuring cup and stirrers. Dye is optional.



1 To determine how much resin you need for a layer, pour water into the mold to the desired depth and then into a measuring cup. Dry the mold afterward.



4 After the resin has been poured into the mold, add the objects using either your fingers or tweezers.



Objects can be inserted into any layer. For a three dimensional effect, "float" one or more objects in each layer.



layer has been poured, or, added after the resin begins to gel in 10 to 20 minutes. (If you are an experienced fruit gelatin maker you will get the hang of this rather easily!) Most objects will float in the resin once it begins to gel. You can hold them down or prop them up with toothpicks or stir sticks, which are removed when the resin begins to support them in the desired position. Pop bubbles in the resin when it begins to gel unless you like the effect they produce. For greater accuracy, tweezers can be used to insert objects.

4. Allow the resin to harden. When this occurs, pour the next layer.

5. After all the layers have been poured, allow your casting to cure. Cover the top with plastic wrap, making

sure it does not touch the surface of the casting. This prevents dust from coming in contact with and pitting the exposed part of the casting. Although the casting can be removed after 24 hours, the ideal time period is one week. This allows the casting to get as hard as possible and reduces the chances it will stick to any surface it touches or scratch easily.

6. To remove the casting, gently pull the edges of the mold away from it. Invert the mold and push on the bottom to release the casting. Another pair of hands, besides your own, are useful here. If you have let the casting cure for less than a week, place it on wax paper on a smooth, flat surface, and drape it with plastic wrap to keep the dust off, again making sure the wrap does not

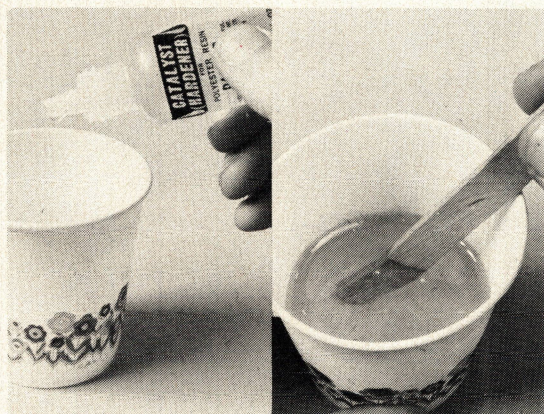
touch the upper surface of the casting.

Molds made from casting resin are unique and interesting. Mine preserve memories as well as marine treasures.

#### CATALYST CHART

THICKNESS OF LAYER	1/8"	1/4"	1/2"
DROPS OF CATALYST PER OUNCE OF RESIN	6	5	4

*This chart is for room temperatures between 65°F and 75°F only. For temperatures above 75°F, reduce catalyst by one or more drops per ounce. More drops speed up the gelling process, fewer prolong it.*

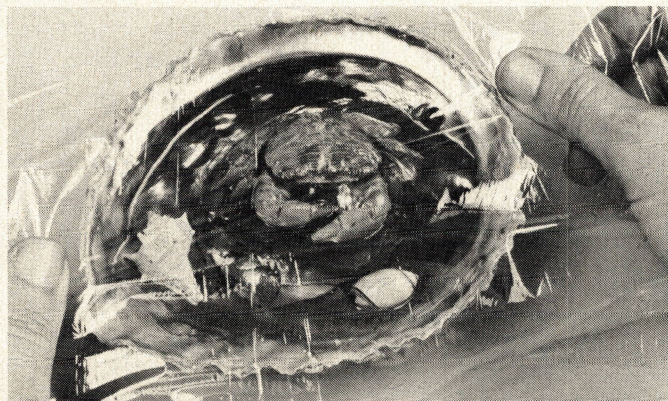


**2** The amount of catalyst used depends on the layer's depth, room temperature and amount of resin used. Stir well after adding the catalyst.

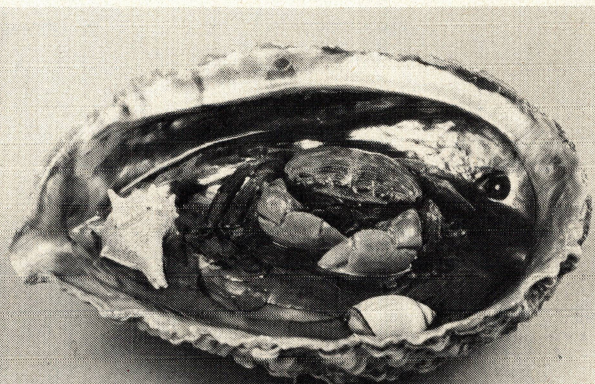


**3** After the catalyst has been added and stirred in, you are ready to pour the resin mixture into the mold. There are many kinds of molds that can be used. This one is a pink abalone shell.

photographs by Geri Murphy



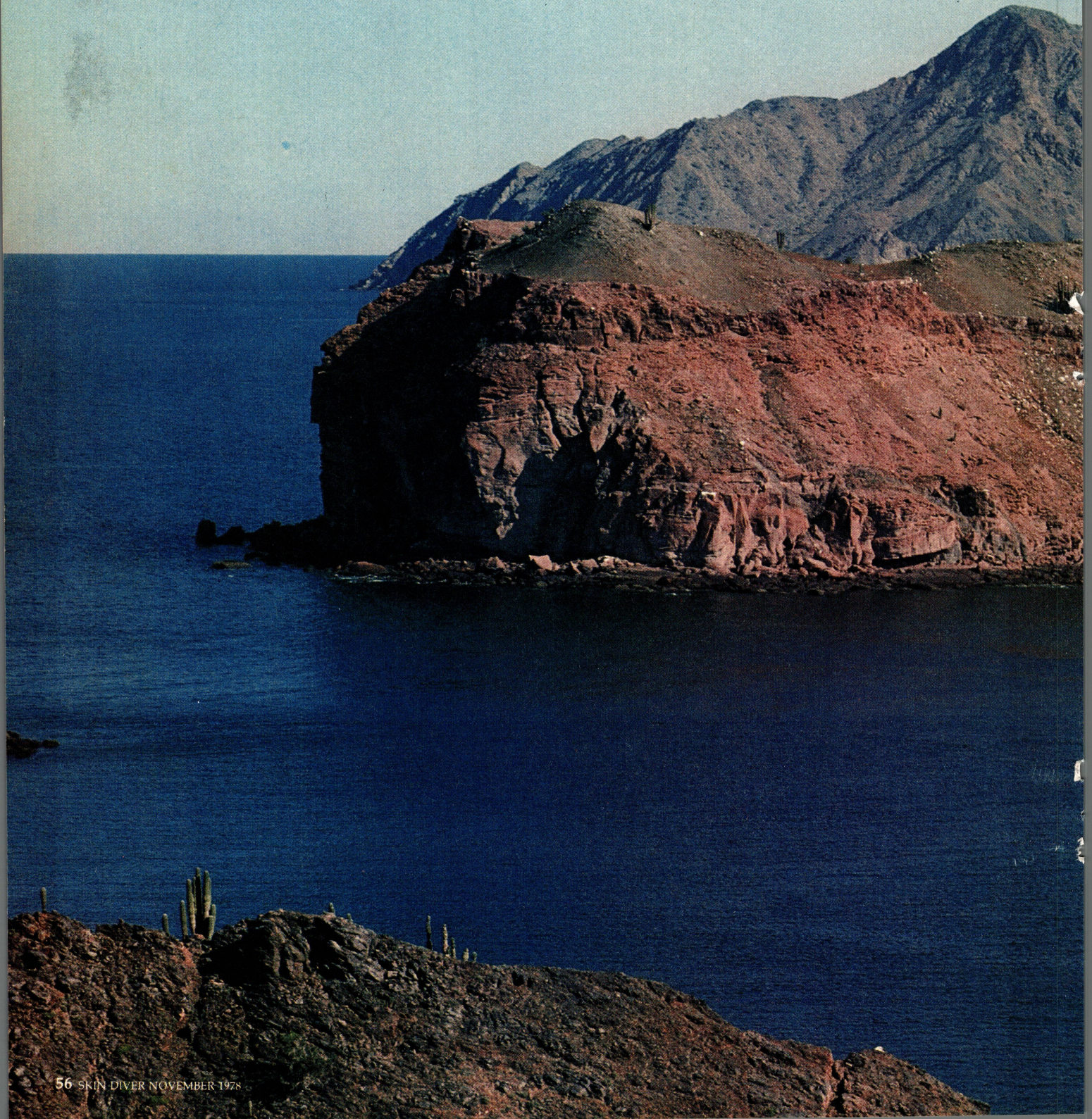
**5** When all the layers have been poured, cover the mold with plastic wrap, making sure that it does not touch the resin.



Casting resin hardens into transparent plastic. Allow it to cure for one week for the best results.



# Secrets of the





# Sea of Cortez

By Howard Hall

Baja's primitive offshore islands offer exotic mixture of marine life



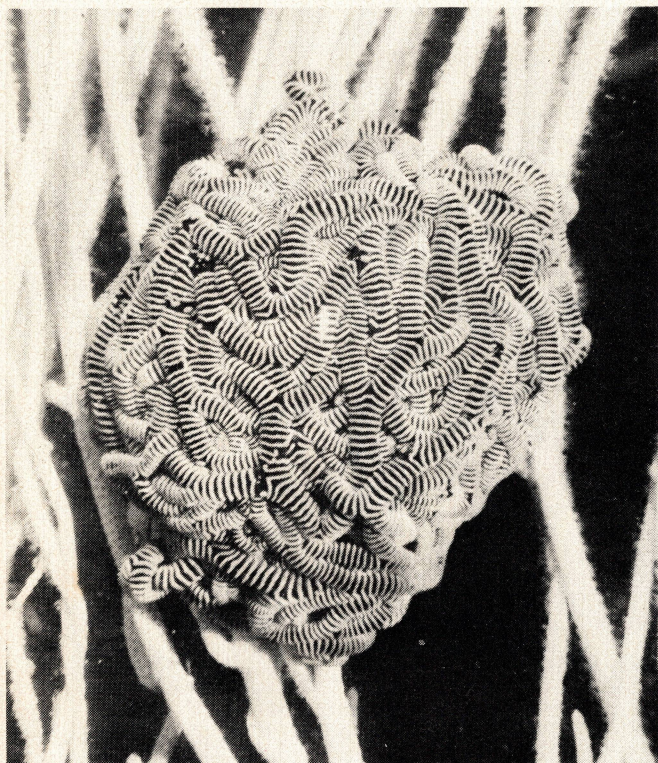
photographs by Howard Hall

The phrase "Deep Blue Sea" is one which does not apply to the Sea of Cortez. From the southern tip of the Baja peninsula to the northern end of the Sea of Cortez, the water color is characteristically green. A dense growth of plankton causes this and forms the base of an enormous food chain, making the Sea of Cortez one of the most densely populated marine environments on earth.

There are many beautiful places in the world to take dive vacations. Most of these have crystal clear water. Certainly, for underwater photography there are distinct advantages to 200 foot visibility. But, after you have dived these clear water resorts, you might begin to look for something different. The Sea of Cortez is different.







The Sea of Cortez offers a diversity of flora and fauna found nowhere else. Above, a basket starfish rests curled up on a gorgonian seafan. At night, it will unfold like a lace handkerchief.

Very few organized dive tours operate in the Sea of Cortez. The best way to dive here is with a company called Baja Expeditions, Inc. It specializes in nature trips to Baja's various islands where the hiking and nature photography is truly spectacular. However, Baja Expeditions has begun to run dive trips on a charter basis and several times a year there are open trips for divers.

Our trip with Baja Expeditions started in San Diego, California. From there we flew via jet airliner to La Paz, Mexico, approximately 100 miles from the southern tip of Baja. It is the largest city on the southern peninsula and has several good hotels, restaurants, and night clubs. In La Paz, we boarded Baja Expeditions' boat, the *Poseidon*.

The *Poseidon* is 75 feet long, has staterooms with two to six bunks, and can carry about 20 people. Unlike most dive boats, the *Poseidon* does not have a swim step. The diving is done from one of three large skiffs carried on board. Although this is somewhat inconvenient for getting your equipment on and off, it is nice to have the freedom to dive where you please. Groups of four to six divers may take the skiffs as many as several miles away from the *Poseidon*. And, when you finish your dive, your skiff operator is right there to pick you up so you don't have to make long surface swims.

From La Paz to San Felipe, our group of 20 divers covered 650 miles in seven days. Each day the *Poseidon* anchored at a different island or point along the eastern edge of the Baja peninsula. Every morning as the sun rose to reveal the primitive landscape of a new island, we prepared ourselves and our cameras for a unique day of diving.

One of the important features of the Sea of Cortez is the deep water upwelling which occurs throughout much of the sea and especially in the midriff region. There are places where you can actually see the cold water boiling up on the surface. This extraordinary upwelling brings nutrients to the surface and creates huge quantities of plankton in the Sea of Cortez. Also caused by the upwelling is the wide range of

water temperatures encountered in this sea. These variations partially account for the great diversity of marine life found throughout the region. We never knew what to expect as we dropped into the rich green water.

It took several days for us to realize that the best diving was always found in areas where there was current. Usually these were points or rocks on the windward side of the islands. My most spectacular dive occurred on the fifth day at a point called El Pulpito. Typically, there was one heck of a current running. Photographers Marty Snyderman, Michele Binder and I took a skiff to a wash rock on the windward side of the point. The skiff operator dropped us about 50 yards upstream from the rock; this gave us time to drift toward it as we prepared to descend. Visibility was about 40 feet — about average for the Sea of Cortez.

As we approached the vertical face of the rock, we noticed the impressive size and diversity of the gorgonian seafans. I had never seen such brightly colored ones. Brilliant shades of yellow, orange, red, green, even purple and white were everywhere. The temptation to shoot my entire roll of film on seafans alone was nearly irresistible.

There existed a certain excitement in the water, like static electricity ready to be discharged at any moment. This was caused by the behavior of the fish. There were great quantities of relatively large fish swimming about us. Hundreds of these, averaging 20 to 30 pounds, swam nervously, as if at any moment they expected to attack each other or be attacked. As I came around a corner of the drop-off I saw huge schools of different kinds of fish just hanging there. As I approached, they bolted away so quickly I could hear their tails beat the water. It sounded like a small explosion.

As we descended the drop-off, we saw countless wonderful subjects for macro photography. There were many different species of anemones and nudibranchs. Many of these were surprisingly large. I saw one anemone more than three feet high and some of the nudibranchs were six inches long.

But the real excitement was at the base of the drop-off. The reason the fish seemed so apprehensive lurked at 100 feet where the drop-off ended on a sandy bottom. The predators were large Baja groupers averaging 150 to 200 pounds. And, there were many of them. At the base of the drop-off I could see at least three of these giants no matter which way I was looking. Although they did not seem afraid of us, it was difficult to approach them. Most of the time they circled us at a distance of about 15 feet.

The tonnage of fish within our 40 foot visibility was remarkable. Not only could we count as many as ten Baja groupers, weighing nearly 200 pounds each, but above the groupers swam large schooling fish such as yellowtail and barracuda, and along the reef there were 20 to 30 pound bass and tangs. I have never dived another place with such an amazing concentration of fish.

Aboard the *Poseidon* we spent our evenings cleaning our cameras, drinking margaritas, eating great native food, and speculating about what we might see tomorrow. One of the nice features of the Baja Expeditions trip is that you do not have to dive to have a good time. Many of our divers would take a skiff to shore and spend the day hiking, swimming, collecting shells, and enjoying the sun. Because people seldom land on the islands, the reptiles and birds are unafraid and can be easily approached.

Baja Expeditions runs trips to the Sea of Cortez in the winter months. During the summer the weather is usually too hot and in the winter the temperature may average 85°F. But, because of the deep water upwelling, water temperatures can be cold, averaging about 70 degrees. Depending on where you dive and the depth, it can be much colder. The owner of Baja Expeditions is Tim Means and our trip leader was Hal Longworth. Our total trip cost, including air fare from San Diego, was \$585. For information write: Baja Expeditions, 1628 Monroe, San Diego, California 92116.





photographs by Geri Murphy

# U.S. DIVERS GROWS

BY JOHN COLUMBIA

In the 25 years since its founding as a division of Air Liquide of Paris, U.S. Divers has grown into a six division, \$35,000,000 a year company. The first year it sold three Aqua-Lung™ units; in 1979 it will be in the Fortune 500 of companies. During a recent interview, U.S. Divers president, John Cronin, explained how they made it. "We are actually a subsidiary of Liquid Air Corporation of North America whose total sales in 1978 were over \$490,000,000. That's enough to put us over the top and into the Fortune 500. Dive equipment sales this year are also contributing to this success and, as a result, we have embarked upon our greatest physical expansion plan."

U.S. Divers now occupies 190,000 square feet of production and storage space in Santa Ana, California. That's an increase of over 25 percent in the last year. As a result, production has doubled or tripled in some areas with the largest growth being in wetsuits. Leadership in wetsuit production is nothing new at U.S. Divers. In the late 50's the company developed and introduced nylon-backed neoprene to the dive market. For several years it remained a company secret until other rubber manufacturers developed similar manufacturing processes. Today, wetsuit production is handled in a separate 10,000 square foot facility. Said Cronin, "Most people don't realize it, but we have the largest wetsuit line in the business — in terms of production capability." During a typical work week U.S. Divers can manufac-



ture 1500 wetsuits, 2500 tanks, 3000 regulators, 6000 fins, 12,500 masks, 17,500 snorkels, 1500 gauges and 1500 BC's.


But dive gear production is just part of the U.S. Divers story. The West Warner address is also the home office for six other related companies. At any time here, and at other locations, production lines are busy turning out equipment for Survivair, Life-O-Gen, Body Guard, Shamrock Rubber, Aqua-Lung and Commercial Diving Division. Four of these divisions specialize in some way that contributes to the dive market as well as the fire and safety market.

John Cronin calls this diversification a logical extension of his company's dive expertise. "Diving is a matter of being comfortable and surviving in a basically foreign environment. When we embarked on our acquisition plan about three years ago, we looked for a market that would most easily marry with the skills we had developed in the sport and commercial diving fields. Fire and safety

came up as the best field to penetrate. The technology goes two ways — the dive experience is bringing new solutions to the safety field and the reservoir of engineering experience in the companies we have acquired is bringing diverse solutions to dive technology. As a result of extensive research and development, we are going to be introducing a series of exciting new products in the months ahead."

How do these companies contribute to this growth? Briefly, Life-O-Gen specializes in emergency oxygen supplies and also manufactures rare gases for sophisticated blood analysis and industrial pollution monitoring equipment. Body Guard manufactures a wide line of high quality turn-out coats for fire departments. Survivair manufactures a self-contained breathing apparatus for use in smoke or poison gas emergencies.

Shamrock Rubber does precision rubber molding primarily for use by the U.S. Divers subsidiaries. And, outside the dive industry, the "Sunkist" you see on oranges was produced by a Shamrock Rubber stamp. The Commercial Diving Division is a separate division of U.S. Divers, best known for the KMB-10 band mask — the world's most popular lightweight commercial soft mask.

And, finally, there is the Aqua-Lung Division, the largest manufacturer of sport diving equipment in the world. There is no doubt that, with the diversified talent provided by U.S. Divers related divisions, it will continue to be a leader in the sport diver market. 



# Let's Go Christmas Shopping!



And to make it easier to give . . . or get the gift every diver wants **skin diver** has spent weeks preshopping for you.



We've packed a special section in the December issue with goodies in three price ranges: under \$25, from \$25-\$50 and from \$50-\$100. There's even a bonus group of gifts for the diver who has everything.

**skin diver**

on sale November 30



**SOUTHWESTERN SERVICES, INC.**

## SCUBA

## AIR COMPRESSOR SERVICE

**SALES • SERVICE • PARTS • OVERHAUL**

*Reconditioned Units Available*

**10-30 CFM, 3000-5000 PSI**

14055 PROTON RD. DALLAS, TEXAS 75240

**(214) 661-8695**

## THE ALL NEW SEA WOLF KNIFE

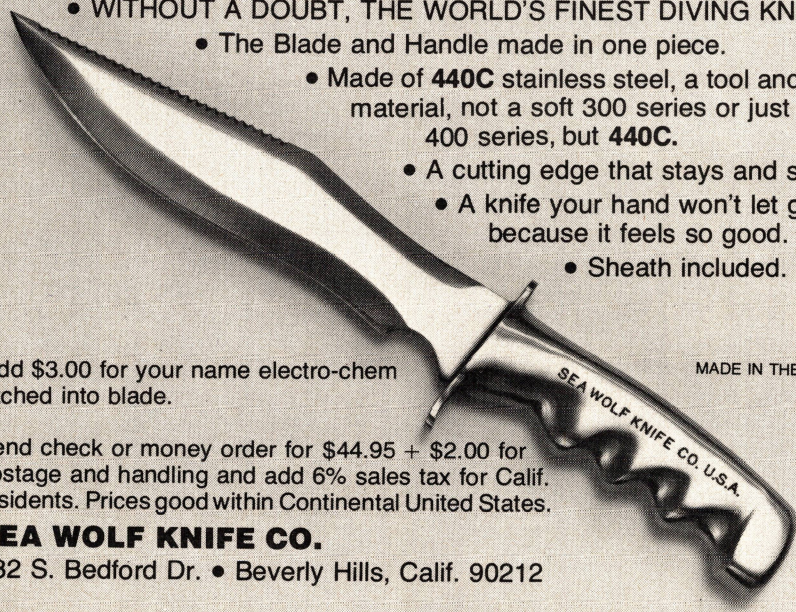
- WITHOUT A DOUBT, THE WORLD'S FINEST DIVING KNIFE.
- The Blade and Handle made in one piece.
- Made of **440C** stainless steel, a tool and die material, not a soft 300 series or just any 400 series, but **440C**.
- A cutting edge that stays and stays.
- A knife your hand won't let go of because it feels so good.
- Sheath included.

Add \$3.00 for your name electro-chem etched into blade.

Send check or money order for \$44.95 + \$2.00 for postage and handling and add 6% sales tax for Calif. residents. Prices good within Continental United States.

**SEA WOLF KNIFE CO.**

332 S. Bedford Dr. • Beverly Hills, Calif. 90212



MADE IN THE U.S.A.

# Medifacts

BY CHARLES V. BROWN, M.D.

## EARS 'N EYES

**E**ar problems are by far the most common dive-related malady. Every diver, at some point in his or her career, has problems equalizing. Eyes are usually not a problem. But, with cataracts and contact lenses, some important questions need to be answered. In this month's Medifacts, Dr. Brown answers some simple and some not-so-simple questions on ears and eyes.

## BLOW-OUT

A tropic vacation soured for an Illinois woman when her right ear became deaf on her very first dive. She had had difficulty equalizing by the swallowing, jaw-wiggling method but managed to continue her descent. Upon reaching 100 feet, she became disoriented and immediately returned to the surface. She had experienced no pain or discomfort but had completely lost the hearing in her right ear. In spite of this, she made two or three dives daily for the remainder of the week with no further problem. At home, her doctor discovered that the membrane over the round window of her inner ear had ruptured. The woman underwent an operation for repair of the window, with partial (not very good) recovery of hearing. May she dive again?

**Answer:** We regret the misfortune but appreciate the sharing of it. The lesson may help others avoid the same fate. For openers, we must point out that while 100 feet may be no big deal for experienced divers, dropping that far on the first dive of a vacation trip is less than prudent. Work up (or down) to it — there's safety in gradualness. Next, the firm rule is never to descend faster or farther than ear comfort (easy clearing) permits. Third, while powerful clearing maneuvers — Valsalva and Frenzel — can cause window rupture, when applied cautiously they can prevent it. Fourth, any hearing deficit following a dive demands early evaluation by a specialist, since window rupture is always suspect and early surgery offers the best chance for cure.

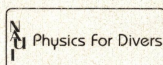
May she dive again? The decision rests upon both physiological and philosophical grounds. If she learns to clear readily, and never descends when she can't, problems will be unlikely. Yet with one ear damaged, risking a ditto for

(Continued on Page 66)





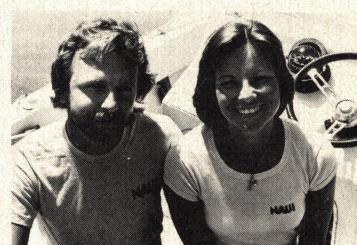
# Gifts For Divers



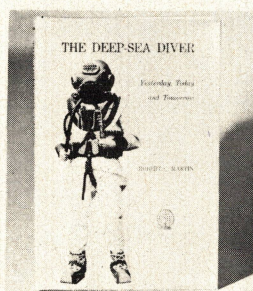
**PHYSICS FOR DIVERS**  
No. 180 \$4.50  
98 pages Soft cover  
*Brand New*



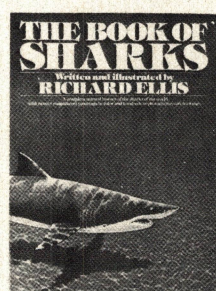
**THE SEA I LOVE**  
No. 921 \$12.50  
88 pages Color  
*Hardcover*



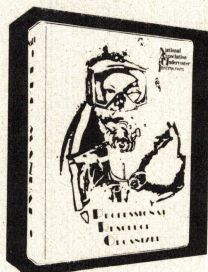
**MENS: SM - MED - LG - XLG**  
Powder Blue \$6.00  
**WOMENS: SM - MED - LG - XLG**  
Powder Blue \$8.00



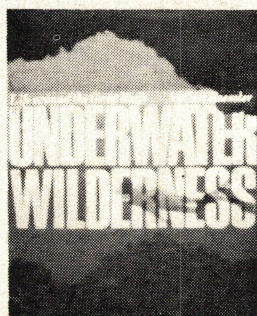
**DEEP SEA DIVER**  
No. 454 \$10.00  
208 pages Hardcover  
Copyright 1978  
*Hot Info*



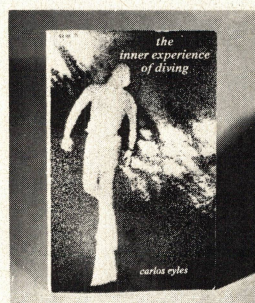
**THE BOOK OF SHARKS**  
No. 931 \$25.00  
320 pages Color Hardcover  
*Soon to go out-of-print*



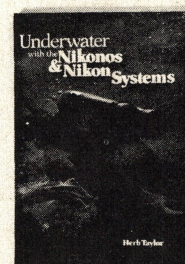
**PRO MANUAL**  
No. 134 \$50.00  
552 pages Ringbinder  
*Instructors Manual*



**UNDERWATER WILDERNESS**  
No. 915 \$35.00  
320 pages Color  
*Fantastic!*



**THE INNER EXPERIENCE OF DIVING**  
No. 708 \$4.95  
*A new approach!*



**UNDERWATER WITH NIKONOS**  
No. 504 \$9.95  
160 pages Hardcover  
*For Shutterbugs*

## ORDER FORM • Mail to "NAUI", Box 630, 785 Colton Ave., Colton, CA 92324 •

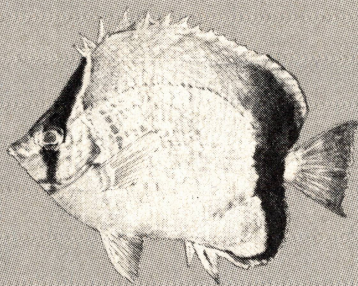
Ship to:	Item	Size	Qty.	Price
Address				
City State Zip Code				
Phone ( )				
Check, Money Order or Charge May Be Used	Total Order			
<input type="checkbox"/> VISA or Master Charge Number	CA Residents add 6% Sales Tax			
<input type="checkbox"/> Interbank No.	Priority Shipping Add 10%			
<input type="checkbox"/> Expiration Date	(All orders shipped Book Rate unless priority shipping fee is paid)			
	Make Checks Payable to NAUI			
	TOTAL			



## The Reef Butterflyfish

(*Chaetodon sedentarius*)

Butterflyfishes get their common name from the fact that they flit about the reefs like terrestrial butterflies. Just as one will often see airborne butterflies circling about each other, so one will see butterflyfishes swimming in pairs, acting just about the same way. If one fish darts forward, the other will hurry to catch up. Their flitting, darting habits are even more emphasized when compared with the swimming patterns of the closely related angelfishes, which swim gracefully, leisurely, and alone. □ Both butterflyfishes and angelfishes are grouped together in the same family, Chaetodontidae. The word *chaetodont* means "bristle tooth," which refers directly to an important characteristic of both fishes. There are obvious differences between butterflyfishes and angelfishes, and most ichthyologists prefer to classify them in separate families. The biggest difference between the two is that angelfishes (subfamily Pomacanthinae) have a strong, obvious spine at the preopercle, while butterflyfishes (Chaetodontinae) do not. □ The reef butterflyfish (*C. sedentarius*) is found in deeper water than most other butterflyfishes and is thought by some ichthyologists to be less common than the others. The fish not only has a deeper water range, but also has a somewhat wider distribution; it occurs as far north as North Carolina and ranges to southern Florida, the eastern Gulf of Mexico, and throughout the Caribbean. □ While almost all butterflyfishes have a big ocellus, or spot, near the tail, the reef butterflyfish does not. It has instead a black



band at the back end, at the base of the tail. There is also a black band through the eye, a common characteristic of all butterflyfishes. The ground color of *C. sedentarius* is pale yellow at the top of the body — becoming progressively darker yellow toward the end of the dorsal fin, and progressively white toward the belly. The band through the eye is bordered at the top by a bright yellow streak. *C. sedentarius* closely resembles *C. ocellatus* (the spotfin butterflyfish, FOM, Jan. '71), but the latter has a small spot at the trailing end of the dorsal fin and no black band at the tail. Also, the overall body shape of *C. sedentarius* is somewhat square, while that of *C. ocellatus* is round. The juvenile *sedentarius* has a small black spot within the border of the caudal fin, like that of the adult *ocellatus*. This disappears with age. The juvenile has the black bands of the adult which it retains as it grows.

The fish will reach about six inches in length. □ Ichthyologist John Randall's detailed studies of the eating habits of this fish indicate its preference for meat. Randall determined that almost half of its food intake consisted of animal material (unidentifiable), and also polychaetes, shrimps, amphipods and hydroids. All butterflyfishes are diurnal, feeding by day and "sleeping," or entering a state of torpor, at night. A diver might easily approach this fish during the nighttime hours because it will act almost dazed. It's quite a different matter during the day, however, when this flighty butterfly would quickly dart away. 🐟

*Photo By George & Luana Marler-Text By Hillary Hauser*

The photo was taken in 30 feet of water off Norman Island in the British Virgin Islands. The Marlers used a Nikonos with a 21mm lens, Subsea strobe and ASA 64 film. Shot at f16, 10 inches from subject.







# BOTTOM BUFFING FOR BUCKS

BY AL HORNSBY

**D**iving is probably the only sport in existence which can easily pay its own way on a relatively casual basis. Very few of us could learn to ski this year and entertain the slightest hope of paying for our expenses while involved in the pastime. However, with the proper knowledge, it is possible for new divers to pay for their diving costs while still having the time to enjoy the activity as a hobby. In this article we will explore one of these avenues, and perhaps we'll find a way for you, too, to go diving for dollars.

Underwater boat maintenance is a field that is rapidly becoming very lucrative for divers. Wherever there are large numbers of boats and marinas, there is a need for boat maintenance which can only be accomplished by a qualified underwater worker. Especially in ocean areas, the maintenance problems faced by boat owners are serious indeed. Retarding marine growth on hulls requires anti-fouling paint applications (the paint itself costs up to \$100 per gallon). Electrolysis, which causes a gradual breakdown of metal components such as props, shafts, struts, and bolts, must be combated constantly. Freshwater boaters, though not bothered by many of the problems encountered by the seagoing enthusiasts, still require hulls to be periodically cleaned and repaired. If the vessel is large, this can be done by a diver at a fraction of the cost involved in "hauling" the boat and doing the work above water. Small scale recovery work can also be done. There is money to be made retrieving motors, anchors, and other items boaters so often lose.

In most coastal areas, underwater boat maintenance has become a big business. In the huge marinas found in the Southern California area, for example, a number of companies exist which clean and care for hundreds of boats each month on a regular basis. The advantages of such a service is being realized by boat owners, and the

savings in overall maintenance costs gained by utilizing such programs are considerable. In fact, according to Dory Ritrovato, owner of Aquatic Boat Maintenance, the largest such company in Redondo Beach, California, "An owner's best insurance policy for his boat is the service of a qualified, licensed, and insured maintenance company. Divers providing monthly cleaning and inspection prevent many major expense problems from ever occurring, and when repairs other than actual hull work are necessary, the costs are reduced considerably."

With the number of new maintenance organizations coming into existence, there is a growing need for trained divers to carry out the service programs. Let's examine some of the duties involved.

A typical maintenance program in an ocean marina has two major concerns: hull cleaning and electrolysis control. Hull cleaning is a surprisingly delicate operation and, to be totally effective, must be carried out with a great deal of care. Boat hulls are coated, normally about once a year, with a lead-based anti-fouling paint. This expensive solution retards the growth of marine organisms which settle on all exposed surfaces. The constant growth damages the boat exterior and cuts down on hull efficiency, resulting in a significant rise in fuel costs. Since the paint is chalky in substance, it is easily scraped off by the overzealous worker. Ideally, the hull should be cleaned in a manner which takes off no noticeable amount of paint.

To accomplish this procedure, the diver, outfitted with a hookah type breathing system — to eliminate a tank banging against the boat hull — starts at the waterline and works back and forth along the length of the boat. A smooth, stainless steel scraper, one and one-half to three inches wide (any wider results in gouging by the sharp corners of the blade) is used to carefully

remove barnacles or hard coral growth. The entire surface is then gone over lightly with a soft nylon brush. This removes the growth layer without damaging the paint surface. More difficult spots may require a nylon scrub pad — first fine, then progressively more coarse. Such careful treatment of the hull can greatly increase the life of the coating.

After the hull is cleaned, the next concern is electrolysis prevention. In sea water, dissimilar metals constantly undergo electrolysis, meaning that ions move from one metal to another at varying rates. In layman's terms, the metal parts gradually disintegrate, becoming porous and brittle as tiny particles are continually lost. This natural occurrence is severely damaging and is a constant worry to boaters. For example, an electrolysis-weakened strut holding a propeller shaft could suddenly give way, resulting in a wildly oscillating prop digging into the hull, causing extensive harm and possibly even sinking the boat.

Thus, electrolysis control is an extremely important part of the underwater service. To prevent ions from being lost between the boat's bronze components and causing structural weaknesses, zinc anodes or "collars" of various sizes are put in place around the metal parts. Since zinc undergoes electrolysis at a faster rate than the bronze, the anode will break down first, thus protecting the bronze parts.

The diver's second task, then, is to check all the zincs and, by scraping off the deteriorated outside (which comes away like a fine ash), determine when new zincs should be added. A screw holds the collars in place, and one that needs to be replaced will usually break free if tested with a screwdriver. If a new zinc is needed, the protected part is cleaned thoroughly with stainless steel wool and a new collar is attached. Regular surveys can prevent zincs from being lost unnoticed and can detect



electrolysis damage before it leads to more serious problems.

After completion of this step, the diver carries out a general inspection. Most maintenance companies keep a month-to-month record card for each boat. The condition of the paint, the zincs, the rudder, the struts, prop, etc. is noted and a courtesy card left for the client. In this way, an owner can keep a constant check on the upkeep of the most important part of his boat, the bottom, which he rarely sees.

A hard working diver can service between 7 and 15 boats in a six or seven hour day, depending of course on his or her speed and the size and condition of the boats. For a 10 to 35 foot vessel, average charges would be \$10 to \$20 per visit if on a monthly basis, and approximately \$18 to \$25 per hour if a one time job. It is easy to see that there is money to be made. We can't pretend that the work is easy but, if you enjoy being underwater, it does have its pleasures and rewards.

Let's examine some of the skills and equipment involved. Your first requirement is to become a certified diver. And most of the company owners we talked to also recommended an advanced diver program of some kind. Your local dive shop may offer such a course, or at least be able to tell you where one is available.

The first special techniques needed for underwater maintenance work can be practiced in a pool with your buddy. Since most marina regulations require divers to operate in pairs, the two of you might be interested in working as partners. Practicing together can also speed up the learning process.

Your initial goal should be to learn to operate competently while upside down. Normally a diver working under a boat wears no weightbelt. For once under the hull, wetsuit buoyancy holds you tightly against the bottom. With this in mind, you should be able to comfortably move about, clear your mask and regulator, handle tools, etc. in this unusual position. You can simulate conditions by hanging from a pool ladder. Once you've mastered the basics, start using wrenches, screwdrivers, and various other tools until you can function efficiently.

Search and recovery techniques can be practiced in a pool as well. Since the bottom of a harbor or marina is usually covered with a fine, silty muck, any disturbance instantly reduces visibility to zero. To prevent this from happening, wear your wetsuit and weight yourself only slightly. Positive buoyancy will keep your fins above you as you approach the bottom and prevent them from stirring up the sediment.

Practice moving along, head down and fins up, until you are proficient.

To be the most effective and be able to earn top money, you should learn the total line of underwater maintenance services. Boat cleaning can pay the bills to be sure, but working professionals will tell you that the real profits come from repairs. Compared to the number of boat owners around, the number of qualified underwater repair people is microscopic. There is a definite need for these skills.

To learn the required procedures, it is best to go to work for an established company. These can be located through a nearby marina and very often are looking for new help. Some

photograph by Al Hornsby



*Hull cleaning is a surprisingly delicate operation and must be performed with care.*

companies hire at a straight hourly rate, but most will put you to work on a contract labor basis. In exchange for the training and accounts they give you, they take a percentage of your earnings. You are in effect partners. This is usually the best working arrangement, and the most profitable. They also will advise you of the marina working regulations and the insurance and permits necessary.

There are several basic pieces of equipment needed but, once you have your initial dive gear, the cost is not great. The list may also vary depending upon your particular area.

Unless you are in the tropics, where a jacket would probably suffice, a warm wetsuit is a must. Long hours in the water are just not possible if you are cold. A plush or nylon two-side suit with farmer john and an attached hood

is considered best. A plain rubber suit will wear too quickly to be a smart investment. Elbow and knee pads are advisable, and the fewer the zippers, the better. They tend to scratch bottom paint, as do snap-locks on jackets (a velcro-alligator arrangement on the beavertail works very well). A good pair of vulcanized cotton work gloves is hard to do without; neoprene gloves may be difficult to work in, though they provide the needed protection.

Your basic dive equipment is the next consideration. A mask that leaks as little as possible will greatly increase your comfort. Large, curved, soft-bore snorkels seem to work best; straight models tend to get caught in the holes of a boat's swimstep. Open-heel, adjustable strap fins that allow the use of booties should also be worn.

As for a breathing apparatus, the hookah type system is ideal. Tanks restrict your freedom while working, and they also can damage bottom paint. Many maintenance divers use a standard first stage mounted on a tank in the boat or on the dock with a very long, low pressure hose that runs down to the second stage. The shallow depths involved allow this sort of "high pressure hookah" to be effective. It is not, however, reliable for deeper sport diving. If you decide to go with such a system, rely upon your local dive store to help set up the equipment properly and give you the necessary training.

As for the tools of the trade, a good list might run as follows: 1. Stainless steel scrapers, 1½ inch and 3 inch blades; 2. Soft bristle nylon brush; 3. Fine, medium, and coarse grade nylon scrub pads; 4. Stainless steel wool (for hardware only!); 5. Screwdriver set (with "T" handle for leverage); 6. Wrenches; 7. Hammer (for tapping zincs); 8. Air tools; 9. Corks, all sizes (used to stop leaks and plug holes during hull repairs); 10. Galvanized bucket (with holes in the bottom and a hook for hanging, to hold your tools and zincs while you work); 11. Assorted zinc collars and a tray to hold them; 12. Prop puller; 13. Dock cart (for carrying all equipment); 14. Small dinghy (not absolutely necessary, but a time saver); 15. Dive flag.

If you are seriously interested in earning some extra income while diving, underwater boat maintenance may very well be the most easily accessible means. There are many underwater boat services operating around the country, and there is a growing demand for interested, working divers. If your area doesn't have such a service, ask around. You may find that there is a very real need for one, and you could be in the business.



# FAMOUS "SKINDIVER" CUSTOM WET SUITS

Only **\$57<sup>95</sup>**

Order direct and **SAVE!**  
Satisfaction guaranteed

Men's or women's custom tailored to your measurements with high pants and collar for super warmth. Finest wet suit material, completely nylon lined. Features sewn seams, non-corrosive zipper and twist locks.  $\frac{1}{4}$ " or  $\frac{3}{16}$ " material — mark choice below. Just fill in your measurements and mail with check today. Quick delivery. Your choice of thickness.

$\frac{1}{4}$ "       $\frac{3}{16}$ "  
Sex      Age  
Height  
Weight

- \_\_\_\_\_ Ankle
- \_\_\_\_\_ Calf
- \_\_\_\_\_ Knee
- \_\_\_\_\_ Thigh
- \_\_\_\_\_ Hips
- \_\_\_\_\_ Waist
- \_\_\_\_\_ Chest
- \_\_\_\_\_ Neck
- \_\_\_\_\_ Wrist
- \_\_\_\_\_ Forearm
- \_\_\_\_\_ Elbow
- \_\_\_\_\_ Biceps
- \_\_\_\_\_ Ankle to Knee
- \_\_\_\_\_ Ankle to Crotch
- \_\_\_\_\_ Ankle to Waist
- \_\_\_\_\_ Shoulder Seam to Crotch
- \_\_\_\_\_ Wrist to Elbow
- \_\_\_\_\_ Bra and Cup Size
- \_\_\_\_\_ Wrist to Armpit
- \_\_\_\_\_ Hat Size

- ☐ GLOVES \$9.95
- ☐ BOOTS \$10.95
- ☐ HOOD \$9.95

MEN OVER 235 lbs. ADD \$15.00  
WOMEN OVER 180 lbs. ADD \$15.00

Add \$4.00 Postage & Handling SORRY, NO C.O.D. (\$5.00 Canada, plus currency exchange) Clip and Mail This Handy Coupon Today! To: **Skin Diver Wet Suits**  
1632 S. 250th  
Kent, Washington 98031

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

## MEDIFACTS

(Continued from Page 60)

the other, even against small odds, can be justified only if diving is a very important part of one's life.

### PINHOLE PERFORATION

Robert Florschutz of Topeka, Kansas, suffered a pinhole perforation of one eardrum during his open water certification dive. He was treated with an antibiotic and decongestant and was cleared to dive after six weeks. He waited an extra two weeks, but the drum broke again at only five feet. He wonders whether the Actifed he took might have weakened the drum, and whether he should wait even longer to dive, or hang up his fins for good.

**Answer:** No, the Actifed could not have weakened your eardrum. And six weeks is plenty of time for a small perforation to heal completely. Whether you should resume diving depends on what caused the rupture in the first place. Mostly, a diver's eardrum ruptures because a eustachian tube fails to function. Occasionally, one pops with slight provocation because of structural weakness. The fact that your drum popped the second time at only five feet tells me that both conditions applied. Don't dive until you're able to equalize very easily, even in the first few feet of descent. You should seek the advice of an ear specialist trained in dive medicine.

### CONSTANT RINGING

W. T. Stewart of LaVergne, Tenn., tells of an unusual experience. Upon surfacing from a 30 feet for 20 minutes dive he was nauseated for about two minutes. Then 30 minutes later he lost his hearing in one ear. There had been no pain, dizziness, or other symptoms. He was hospitalized for three days and treated with intravenous medication. By 11 days post-dive his hearing had returned almost completely, but constant ringing in the ears persisted. What happened? Was it dive-related?

**Answer:** Nausea, dizziness, and loss of spatial orientation are symptoms of disturbance of the vestibular apparatus — that's the inner ear organ which senses position and change in state of motion. It's uncommon for nausea to be the only symptom, but in your case it apparently was. Your subsequent hearing loss and ringing in the ears reflect disturbance of the cochlear apparatus, also in the inner ear. When such symptoms follow a dive, one must consider decompression sickness, air embolism from lung overpressure, and barotrauma.

Your dive profile makes decompression sickness most unlikely. I'd doubt air embolism on several counts: nothing unusual about the ascent; delay of coch-

## Real sunken treasure, lost at sea in 1715



### Genuine Silver Pieces of Eight...

recovered from the sunken ruins of a Spanish treasure fleet, hurricaned to the fathoms of the Florida Straits on July 30, 1715. Real treasure of the Spanish Main... for a holiday of lasting history. Struck over 250 years ago from solid silver, one side shows the Spanish Crest, the other at least two arms of the Cross... and no two are alike. Choose the 4-Reale Piece of Eight Pendant beveled (framed) in handcrafted sterling silver with sterling chain... or the 1 Reale without bezel on a sterling chain. Guaranteed genuine, they come gift packaged in a reed basket with our Certificate of Authenticity, History and 30-day full refund guarantee. Make History this holiday... give real treasures from the past.

#1002 Genuine 4-Reale Piece of Eight Pendant with Sterling Silver Bezel and 24" Sterling Chain .....\$195

#1003 Genuine 1-Reale Piece of Eight Pendant, with 16" Sterling Silver Chain .....\$75

Please add \$3.50 postage per order. We will ship anywhere. Phone orders: 802/229-0394 MC/VISA/AMEX: include card no. and expiration date with order. TELEX 954616.



**World Treasure Society**  
1406 School Street, Box 218,  
Montpelier, Vt. 05602.  
802/229-0394. A Division of  
International Coins & Currency, Inc.

### FREE.

Write for our catalogue of Real Treasures From The Past — the most unique gift catalogue you'll ever see.





Direct Type 'R' printing is the best way to go if you shoot slides or transparencies. Best because your enlargements are printed directly from the original slide

Size	1	10 or more*
3x5	.60	.40
5x7	1.25	.90
8x10	1.95	1.75
11x14	4.00	3.25
16x20	9.00	8.00
20x24	12.50	11.00
20x30	16.00	13.50

Minimum order \$5.00 assorted shots\*

### Free Texture!

Retinachrome offers you a choice of Canvas, Silk, Matte or Glossy finish at no extra charge! One texture per order, please.

### Mounting

Flush mounting on artboard is available  
11x14 (& smaller) 2.50 16x20 ..... 4.50  
20x24 ..... 5.50 20x30 ..... 6.50

Take advantage of this great Type 'R' Special

Mounting Special  
11x14 only 1.50 ea.

11x14  
3.00  
with coupon  
Reg 4.00 Limit 5  
Offer ends November 15, 1978

OFFER VALID UNTIL  
November 15, 1978

NEW

Matte Spray 8x10 — .30  
11x14 — .60  
Professional protective 16x20 — 1.25  
Matte Spray is available at 20x24 — 1.60  
an additional cost 20x30 — 2.25

## Retinachrome

P.O. Box 30579 - Seattle, 98103

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

\$5.00 minimum

YES! SEND ME 11x14 at 3.00 each.  
Limit 5

\$1.75 minimum postage on all orders. Foreign orders \$2.00 extra. Shipments sent UPS or First Class Mail. Please enclose check or money order. No C.O.D.s, please.

lear symptoms for 30 minutes; and absence of other symptoms. That leaves us with barotrauma.

Your doctor would have told you if he'd seen signs of eardrum or middle ear damage, but barotrauma can occur without them. Vigorous ear clearing attempts, or even painless reverse squeeze, can rupture a round or oval window. I suspect that's what happened to you. Window rupture sends a shock wave through the inner ear, and also allows inner ear fluid to leak out (into the middle ear). Onset of symptoms is often sudden, but a slow leak could result in delayed symptoms. If improvement is not prompt, dive specialists favor surgical exploration to look for and repair a ruptured window.

We can't say for sure what caused your problem. Further diving might invite a recurrence. Don't chance it unless you have been checked out and cleared by an ear specialist who is also trained in dive medicine.

### NO PLUGS!

Jewel Griffin of San Fernando, California, saw an ad for a certain brand of ear plugs depicting a user happily wearing them underwater. He wrote to the company, warning of the danger in such practice. Their reply indicated that they did not consider it harmful, Mr. Griffin seeks confirmation of his own view.

**Answer:** If a diver's ear plug fits well, admits no water, and does not move, the air in his external ear canal will remain at one atmosphere of pressure. As he descends, compressed air will pass through his eustachian tube and enter his middle ear space, at ambient pressure, so his eardrum will start to bulge outward. The pressure at which the drum will rupture is quite variable. According to the authoritative textbook *Diving Medicine*, the range corresponds to ocean depths of 4.3 to 17.4 feet. If a diver should wear ear plugs to that depth which is critical for him, either an ear drum would rupture, or the plug would be driven into the canal. Even if the drum did not rupture, it would probably bleed and blister, painfully. This is called external ear squeeze. So you are quite correct — ear plugs are fine on the surface, but no-no's below.

### BOXER'S EAR

Frank Dudas is a boxer and takes a lot of punches to the nose and ears. Before boxing, he never had trouble clearing ears or sinuses on a dive. But a recent 25 foot drop caused pain in one ear and a frontal sinus. Could the boxing be responsible?

**Answer:** Having boxed, I can sympathize with your nose. Though it protrudes like a bumper guard, it was never meant to absorb shocks. Injured tissues swell, including nasal membranes. But

## A PROFESSION IN DIVING?

We have a future for you as a professional scuba instructor!

Our Instructor College was the first college of its kind in the entire world.

Many graduates from our Instructor College now own retail diving businesses.

Others are managing diving resorts or are employed as full-time professional scuba instructors.

The law says that we cannot guarantee a job to anyone. However, we can send you letters from diving retail stores seeking full-time instructors trained by our college. We can give you the names and phone numbers of graduates from our college who work in NASDS store/schools across the U.S. and Canada. If you're interested in our college, contact us... we'll tell you more.

Our vocational Instructor College is considered to have the highest standards in the industry. It is supported by over 300 retail store/schools throughout the world.

We don't run "short" programs. We do not cross-certify with other agencies.

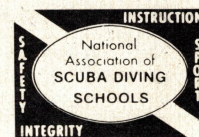
You will earn the instructor rating you receive in our intensive 10 week program in San Diego, California. We certify true professionals from our Instructor College.

The cost for attending the NASDS Instructor College is \$1,695.00 plus books.

Please include your phone number and area code on any correspondence.

If you seek further information, write:

NASDS EDUCATIONAL DIVISION  
SAN DIEGO DIVERS SUPPLY  
DIVING INSTRUCTOR COLLEGE  
4004 SPORTS ARENA BLVD.  
SAN DIEGO, CA 92110



State approved for V.A.  
Students Voc. Rehabilitation  
State and V.A.





# **Samantha** The best-selling Red-Sea picture book from the camera of DAVID PILOSOFF

underwater photographer and film maker ... an exciting look at the incredible flora and fauna of the world's lushest diving waters... as glimpsed by nude model Samantha Bond.

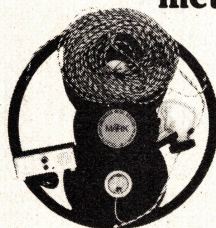
An artistic, 148 page book, 9½ x 13½ hardcover in full color. Detailed scientific, technical and photographic data for nature, diving and camera buffs.

A must at \$25.- add \$2.5 for postage and handling. sorry: no C.O.D.

ORDER FROM:  
**SAMANTHA BOOK CLUB**  
18 W. 38 ST., NEW YORK, N. Y. 10018

# The diving equipment it pays to own

## The Fishers underwater metal detector



FOR BOAT TOWING  
OUR MOST SENSITIVE UNIT

**MARK 7**  
**\$528**  
(Plus \$25.00 Shipping)

• SALT OR FRESH WATER • DETECTS ALL METALS • BIG, 32" SEARCH COIL • 8½ FOOT RANGE — DETECTS CANNONS OR COINS • 9V BATTERY • SURFACE CONTROL BOX WITH: METER & CONTROL. VOLUME CONTROL, ON/OFF. SPEAKER, EAR PHONE PLUG, COIL PLUG • 150' TOW/CONTROL CABLE • 2 YEAR WARRANTY

You've invested money in diving gear — now invest in a metal detector and start getting a return on your investment. With a Fishers metal detector you'll begin finding all those rings, coins, motors and anchors you've been passing over all these years and never saw. Diving with a Fishers detector is fun and could be profitable.

**MARK 1 (Most economical) . . . . . \$198**  
**MARK 3 (Most popular) . . . . . \$269**  
**MARK 5 (Sensitive w/Audio) . . . . . \$385**



Find out more about these fine Fishers' products: Write for our complete catalog.

**J.W. FISHERS MFG. CO.**  
ANTHONY ST. (DEPT. SN) TAUNTON, MASS. 02780  
(617) 822-7330

## MEDIFACTS

that wouldn't normally block the sinuses, since they open behind the parts of the nose exposed to pugilistic punishment. Also, the swelling is temporary and usually gone within a week or two.

A very hard blow could conceivably fracture a cheek bone in such a way as to interfere with drainage from the maxillary sinus, but this must be very rare. It is even more difficult to see how damage from boxing could interfere with drainage from a frontal sinus or middle ear. It is more likely that an unsuspected allergy or infection is behind your problem, so consult an ENT specialist.

## CATARACTS

William Nicholls of Salem, Oregon, has cataracts and might need surgery. The doctors tell him he is in good shape and they see no physical reason for his not being able to dive. However, they don't know about the surgery. Will the cataracts end his diving? If he does have the surgery, how soon will he be able to dive again? Will a contact lens be a problem? Will it be better to get glasses?

**Answer:** Diving will not harm the operated eye, once the surgical wound has healed. Ordinarily eight weeks suffices for this, but there are variables, so let the doctor decide. Some surgeons implant a corrective lens within the eyeball, but this technique is still too new and controversial to permit a recommendation. A modern lens in conventional glasses does quite well for central vision, but cannot provide peripheral acuity. Furthermore, it cannot be mounted onto your faceplate. That would require a lens with its front surface flat instead of concave, and those available today would not correct your vision as well. Your best bet will be a contact lens, if you can tolerate wearing it. Many divers do wear contacts underwater.

## LENS BENDS?

Six years ago Bruce Parker had a double cataract operation and recovered nicely. He wears hard contact lenses and has 20/20 vision with them. However, upon surfacing from dives below 60 feet, for 30 to 35 minutes, his left eye goes out of focus for an hour or more. A few years ago, both eyes were affected, but now only the left one is a problem. Bruce is a professional diver and is concerned about decompression sickness and the possibility of damage to his eye.

**Answer:** Your complaint is most uncommon. Decompression sickness is unlikely — it wouldn't strike repeatedly with such great precision, then resolve so quickly and completely every time. Besides, the dives that cause your problem are well within the no-decompression

# THE DIVE SHOP'S MONEY-SAVING PLAN

## The lowest mail order prices plus in-store discounts



Photo by Jackie Merrit Meyer



Scuba tanks, regulators, buoyancy compensators and other underwater life support apparatus cannot be advertised for mail orders. But the big discounts can be yours in person at THE DIVE SHOP.

Send for our free catalog and diver decal.

Wherever you live, you can get the very special prices of Long Island's most professional diving equipment distributor. For fast service and quality assurance, order direct, using mail order coupon.

- A. ☐ Oil Filled Depth Gauge \$21.95
- B. ☐ U.S.D. Pressure Gauge \$29.95
- C. ☐ U.S.D. 3/16" Nylon 1 Side Wet Suit, 1 Zipper \$58.95  
Ht. \_\_\_\_\_ Wt. \_\_\_\_\_ Chest \_\_\_\_\_  
Waist \_\_\_\_\_ Hips \_\_\_\_\_
- D. ☐ 1/4" Cold Water Hood \$13.95
- E. ☐ U.S.D. Pacifica Mask \$11.95
- F. ☐ U.S.D. Snorkel \$4.95
- G. ☐ 3/16" Hardsole Boots \$14.95 \_\_\_\_\_ Shoe Size \_\_\_\_\_
- H. ☐ U.S.D. Rocket Fins \$17.95

In person discounts from THE DIVE SHOP:

- I. U.S.D. BC II Vest \$99.95
- J. Deluxe Scuba Special  
80 cu. ft. aluminum tank  
Contour back pack  
Conshelf XIV regulator  
\$225.95 w/ K-valve  
\$230.95 w/ J-valve
- K. Conshelf XIV regulator \$89.95

The Dive Shop reserves the right to substitute models or brands of equivalent or greater value, which you may return unused within 10 days if not delighted.

ACT NOW! These low prices can only be guaranteed for one month after magazine issue date.

## THE DIVE SHOP "Where professional divers shop"

110 West Main Street, Bay Shore, N. Y. 11706 (516) 665-2526  
THE DIVE SHOP pays all shipping costs within the continental U.S.A., but there is a \$2.00 service charge for orders under \$25.00. Outside the continental U.S.A., (Alaska, Hawaii, Puerto Rico, etc.) all freight charges are C.O.D.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Amount enclosed \$ \_\_\_\_\_  
N.Y. RESIDENTS ADD SALES TAX


- A. ☐ Oil Filled Depth Gauge \$21.95
- B. ☐ U.S.D. Pressure Gauge \$29.95
- C. ☐ U.S.D. 3/16" Nylon 1 Side Wet Suit, 1 Zipper \$58.95
- D. ☐ 1/4" Cold Water Hood \$13.95
- E. ☐ U.S.D. Pacifica Mask \$11.95
- F. ☐ U.S.D. Snorkel \$4.95
- G. ☐ 3/16" Hardsole Boots \$14.95
- H. ☐ U.S.D. Rocket Fins \$17.95
- ☐ Free Catalog

SD 11



sion limits, and as a professional, you're better adapted than most.


I believe your problem is related to your contact lens. To prove it, try diving to 70 feet for 30 minutes without wearing it, then re-insert it just after surfacing. If you are able to see normally, the lens was the villain.

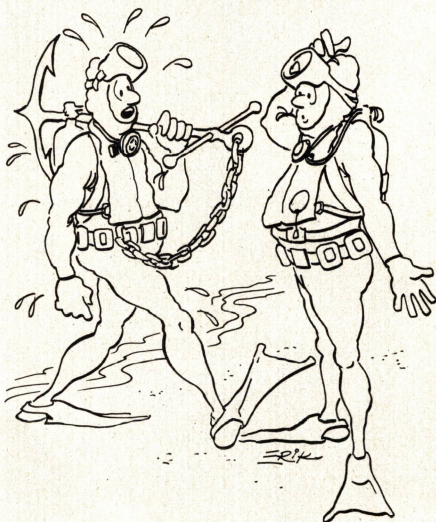
It's tougher to explain how your contact lens could cause the symptoms. Here is one theory: Contact lenses are designed to be slightly more concave than the cornea is convex. There is a small space between the lens and the cornea filled with tear fluid. This fluid would gradually absorb nitrogen at depth, and if it could not rapidly lose that nitrogen upon ascent, bubbles would form within it, blurring the vision. You can check this possibility by making a dive that does blur your vision, and then remove, rinse, and re-insert your contact lens. If the blur is gone, you have your answer (get a better fitting contact). If the blur remains, it's back to the drawing boards for us. 

## L'AVENTURE COUSTEAU

L'Aventure Cousteau, produced and narrated by Bill McDonald, will be held on December 29th at 7:00 p.m. at the Tacoma Bicentennial Pavilion, Tacoma, Washington.

The two-hour slide/film presentation shows Captain Jacques Cousteau, his son Phillipe, and the *Calypto* diver scientists at work in their quest to preserve the beauty and the balance of the water planet. A question and answer period will follow the film presentation.

Tickets are \$5 and may be purchased at Pacific Frogman, 7516 - 27th Ave. West Tacoma, WA 98466. All proceeds will go to the Mary Bridge Children's Hospital in Tacoma. 



"Strong current."

GLOBAL • HELLOPHONE • HYDRO PHOTO • KELITE • IMPERIAL • INGERSOL • JEPPESEN • JOY

**SUPREME DIVERS**  
TORONTO-CANADA

**MANUFACTURERS OF MENT AND RELATED HIGH** **HYDROSTATIC EQUIP- PRESSURE AIR SYSTEMS**

WE SHIP FOB OUR WAREHOUSES ON THE EAST AND WEST COAST OF THE UNITED STATES

**P90 Portable Lightweight Compressor**

For smaller groups of divers — weighs only 32kg — fits the trunk of any car — fills 80 cu. ft. tanks to 3150 psi in 22 minutes — equipped with gasoline electric motor.

Complete with cart-ridge filter  
**\$1800** (shipping \$50).  
Larger Poseidon models available.



**Supreme Pure Air Systems**

Supreme Pure Air Systems are manufactured to ASME (4-1) pressure standards for up to 100 SCFM pure, dry air. Systems are available with or without CO removal, complete with all necessary gauges and fittings for fast, easy installation; featuring low-cost cartridges for replacing filtration chemicals. Exceeds all current standards for compressed breathing air purity (OSHA, CGA, CSA).  
Shown model S-II: processes 24,000 cu. ft. of air, with CO removal \$995 (shipping \$25). Replacement cartridge \$39.95.



**High Pressure Compressors:**  
Ingersol-Rand model 6R51, 50CFM, 5000 psi; head complete (no motor or filters); unused government surplus; one year guarantee; \$6000.

**Hydrostatic Testing Equipment:** We custom manufacture hydrostatic cylinder testing equipment for recertification of all cylinders from scuba tanks to giant trailer tubes forty feet long.


**Write for a free copy of our Commercial Catalogue.**

**Tanks**

Name Brand Galv. 71.2 cu. ft. Steel Tank W/J Valve, U.S. Divers Mariner Pac & Boot; \$149.95 (shipping \$6).

U.S. Divers 80 cu. ft. Professional Aluminum Tank W/J Valve, U.S.D. Mariner Pac & Boot; \$194.95 (shipping \$6).

Pony Bottles; now improved.  
1/2" O-ring neck and valve... harness... high resistance finish:  
12 cu. ft. 4" dia. x 22" ... \$74.95  
20 cu. ft. 4" dia. x 27" ... \$84.95



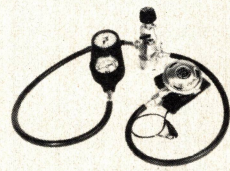
**Oceanic Dive Light**

This popular hand-held rechargeable light provides 1 1/2 hours of burn time on a single charge from 110 volt a/c, or from your 12 volt d/c car cigarette lighter; \$69.95 (shipping \$3).



**Dacor Polar 400 Regulator W/Oceanic Combo Gauge**

Reg. only \$159.95  
Reg. & Combo \$260.  
(shipping \$3).




**Supreme Jet Master Fins**

Manufactured in Europe for Supreme Divers — styled in the world's most popular design. Available in mini and large sizes; \$19.95 (shipping \$4).



**Super Sport Wet Suit**


Unbelievably low-priced 1/4 in. nylon lined super suit... all stitched seams... one zipper... custom contoured... one year guarantee... in men's stock sizes only: XS, S, M, L, XL (if unsure of size, send height, weight, waist and hip measurements); \$99.95 (shipping \$7).



**Send \$1.50 for a copy of Canada's largest and most informative sport diving catalogue (142 pages), refundable with first purchase.**


**Decompression Meter**

World famous decompression meter from S.O.S. is the only hand-held mechanical De-Com meter that has proved itself reliable over the years; \$99.95 (shipping \$3).



**Puma Mask**

Modern, light weight, low volume mask. Fast, easy strap adjustment allows positive locking, easy adjustment, and smooth cosmetic appearance. \$27.95 (shipping \$2).



**DEDUCT 10% FROM ALL ORDERS PAID IN U.S. FUNDS.**

**SUPREME DIVERS LTD.**  
170 King Street E., Toronto, Ontario M5C 1B1  
(416) 364-2341 Telex 06-23250 Supreme Tor.

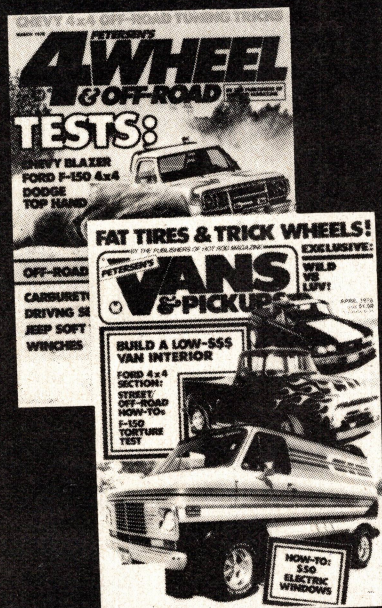
Life support equipment cannot be advertised for mail orders. Enquire at our stores for point-of-purchase sale details.

WORTHINGTON • U.S. DIVERS • UNISUITS • TABATA • TEKNA • TIGULLIO • TYPHOON • SUBSEA • SYAMSPORTS

AGAVE • AMF SWIMMASTER • BAUER • CLARK • DACOR • DAVEY • ELMO • FARALLON • FENZY • GLENN BEALL'S • MAKO • NEMROD • NIKONOS • OCEANIC • ORIENT • PARKWAY • POSEIDON • RAND • REAVELL • RICHIO • RIX • ROLEX • ROLLEI • SEA SUITS • ZODIAC



# OFF-ROADERS! 4-WHEELERS! TRUCKERS! VANNERS!



From the publishers of **HOT ROD** magazine come these two all-new monthly magazines.

**4-WHEEL & OFF-ROAD** is geared directly to the do-it-yourself off-road enthusiast while **VANS & PICKUPS** zeroes in on every aspect of the fabulous truck and van craze.

Both new magazines regularly feature how-to's, road tests, pictorials, buyer's guides, project vehicles, and new products.

You get all this and much, much more every month in **4-WHEEL & OFF-ROAD** and **VANS & PICKUPS**. Look for them at your favorite newsstand.



**Petersen Publishing Co.**  
8490 Sunset Blvd.  
Los Angeles, CA 90069

## FRAN GAAR — MASTER INSTRUCTOR

"I think some people should be boiled in oil!" That's Fran Gaar, PADI's first woman master instructor speaking on the subject of sharks. She adds, "To frighten a whole generation of youngsters and their parents with distortions such as *Jaws* is ignorant and selfish. Considering that sharks don't get diseases maybe we should concentrate on trying to learn something from them instead of continuing this dreadful exploitation."

Fran Gaar is director and founder of the Aqua-Lung School of New York, located in Manhattan since 1964. Among her many credits, she was aquatic supervisor and soloist for the famous live "Sea Hunt" show at the New York World's Fair. She was also featured as Miss Pickeral underwater on the Miss Pickeral NBC-TV show, and served as stunt coach and water choreographer for the Esther Williams TV special.

For several years she served as director of skin and scuba activities for the Holland American, Italian, and United States lines. She entertained on board ship with exhibitions of her unique specialty — acrobatics and ballet with a scuba tank, a highly developed skill. As director of World Wide Water Tours, she and her staff taught skin and scuba diving and conducted underwater tours throughout the Caribbean.

"I haven't met the person I couldn't

teach." When she says this it's not a boast. It's a statement of fact based on years of experience, and it comes from a confident woman who prides herself on her teaching ability.

Fran goes on, "Anybody who wants to dive can if they really want to. However, I find that some students are not psychologically ready to move into this watery environment. They come to me and say, 'Fran, thanks, if anybody could have taught me to dive, you could have. But I learned that I'm really not cut out for diving. And I'm satisfied, because I could have gone off on my own or taken a quickie course and hurt myself.'"

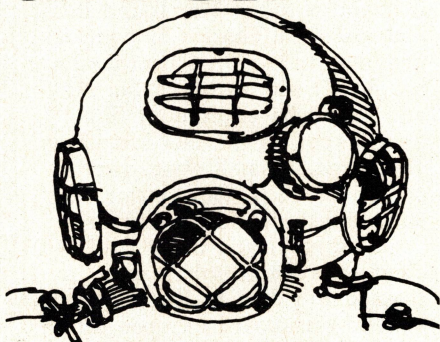
The Aqua-Lung school of New York is the oldest school in the area and has had many famous students from all over the world. Many water luminaries that Fran has worked with, such as Peter Gimbel, Elgin Ciampi, or Stan Waterman, send performers to her for training. "When I first started I was aquatic director of 'Sea Hunt' [at the World's Fair]. A few friends asked me to teach them to dive, then a few more friends, and friends of friends, and relatives. And soon the Aqua-Lung School of New York evolved. I used to think, well I'll finish this class, then I'll go back to the cruise ships, or to a show. But the school refused to stop. It just kept growing and growing. I never started out to have a school, it just happened. You know, we still get the majority of our pupils from former students. For years we got them strictly by word of mouth. I didn't even have a listing in the yellow pages."

She and her corps of instructors have certified thousands of divers since 1964,





# you can be a deep sea diver.



## adventure/high income world travel/challenge

An exciting and lucrative career is waiting for you in commercial deep sea diving. At our facility in Houston you'll train in all phases of commercial diving. We have day and night classes and we are approved for veteran training. Upon graduation, we'll assist with job placement. To learn more about this career with a future, call our Registrar's office or mail the attached coupon today.

Tell me more about a career in commercial diving.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Phone No. \_\_\_\_\_ Age \_\_\_\_\_

**The Ocean Corporation**  
Commercial Diver Training Division  
5709 Glenmont, Dept. S (713)661-0033 Houston  
Texas 77081

offering PADI, NAUI, CMS and Aqua-Lung School of New York certifications. Nothing unusual in that, but the teaching that's behind it is. "We teach semi-private in small groups, about four students per instructor. Our instructors work their lessons to the needs and problems of the individual student. Our students also make their own schedules, it's very flexible.

"We prefer to teach our students without weightbelts. Weightbelts are for the purpose of offsetting the buoyancy of wetsuits. It takes more time and patience with some people; that's one reason our students get all the extra classes they need without extra charge. Working without weights teaches one control. It prevents over-breathing and stresses relaxation in the water, which is the key. Our students are kept in the shallow end of the pool until proper breathing and relaxation are mastered.


"We are also very particular about the student's kicking technique. One sees many experienced divers with terrible kicks, bending badly at the knees, using mostly their calf muscles and often using heavy jet or rocket fins for which they are unsuited. The whole leg must be used, the strength comes from the heavy thigh muscles and the hips."

Since those days of *Sea Hunt* and the Esther Williams specials, Fran has seen a lot of changes in diving. "The most positive step forward in this great adventure is that it is now really open to women. In those days divers were often former Navy frogmen and pretty gung-ho. They were great divers. And often I've gone out on dive boats and been the only woman among a lot of men. Now that's changed, and I'm happy about it."

Miss Gaar was PADI regional director for New York, New Jersey, and Southern Connecticut and director of the first PADI instructors institute in the New York metropolitan area. She feels the instructor plays a particularly vital role in scuba instruction. "You can read all the textbooks in the world, but you don't really understand it until you have an instructor explain it and help you."

Talking about her school Fran says, "When it comes to safety, we've never had so much as a minor accident. I'm especially proud of that." As a teacher, she stresses safety and patience. "We also encourage our students to go on to the advanced class, especially if they intend to become northern divers. They get to do a lot of diving under the supervision of their own instructors. The North Atlantic is tough to tackle on your own. You need a lot of experience to become a real diver."

The Atlantic is like a second home to Fran. One she knows well. She's made hundreds of dives in the Atlantic and had her share of excitement.

Fran Gaar — PADI, W-M #1, actress, diver, teacher. Not your ordinary dive instructor. 

## Henderson's Famous "Bug Bag"



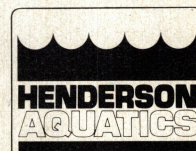
Whether you're searching for treasure, collecting coral, or hunting lobster, you'll find a Henderson "Bug Bag" is just the place to stash your catch. Lightweight & strong, it's designed to fully unfold under water, leaving your hands free.

Made of extra heavy duty nylon mesh, non-corrosive metallic tubing with neoprene hinges for durability, and a stainless steel latch for trouble-free closure. **Available in 2 Sizes.**

**SEND FOR OUR  
FULL-COLOR  
CATALOG OF WET  
SUITS, DRY SUITS,  
TOPS AND LOADS OF  
ACCESSORIES**

(INCLUDE \$1.00 TO COVER  
COST OF POSTAGE & HANDLING)

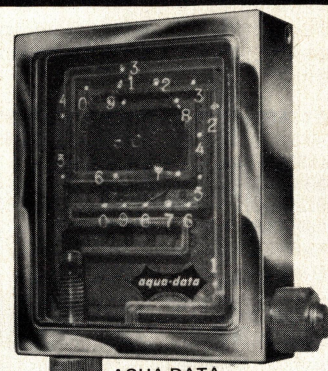
**BUCK & SASSAFRASS STS. MILLVILLE, N.J. 08332  
(609) 825-4771**



Dealer inquiries invited

**aqua-data**

**PROFESSIONAL  
DIVING  
INSTRUMENT**



**AQUA-DATA  
MODEL 501  
PRICE \$64.95**

For deep dives and decompression stops, the AQUA-DATA Dive Instruments are great!

The Aqua-Data Depth Instruments are easy to read at 200 feet as well as at 10 feet. It is so accurate it will measure your dives up to +0, minus 4 inches at any position of the scale. AQUA-DATA Dive Instruments are quality and virtually indestructibly designed.

Order your AQUA-DATA Brochure describing our depth gauges. Enclose one dollar (U. S. currency) which will cover the mailing. You will find that AQUA-DATA Dive Instruments are a real value and reasonably priced.

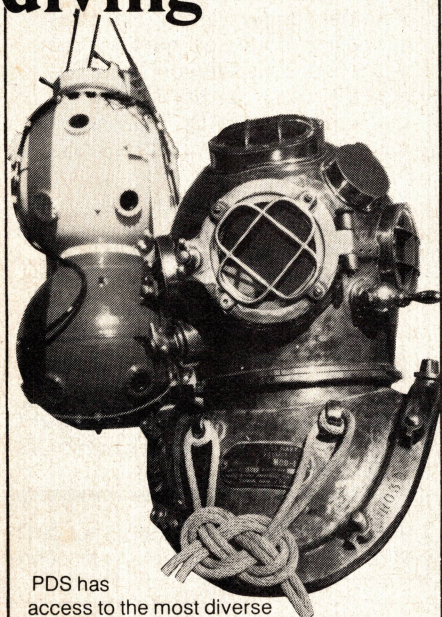
(DEALER INQUIRES INVITED)



**PRECISION TOOL COMPANY  
Route 1, Box 94-C  
Jacksonville, AR 72076**



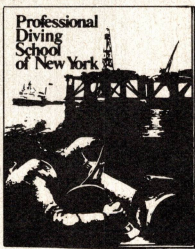
# Professional Diving School trains you for all aspects of deep-sea diving



PDS has access to the most diverse and sophisticated up-to-date underwater equipment in the world, and the experts to train you with it. To completely prepare you for a diving career we offer a comprehensive program — and we offer it for one tuition. Want to find out more? Get our complete catalog and curriculum — don't wait, the future is tomorrow.

**NAVY DEEP SEA DIVING DRESS (MARK V), BAND MASKS, KMB, GAS HATS, MIXED GAS, DIVING BELLS, CUTTING & WELDING, SALVAGE, COMMUNICATIONS, PHOTOGRAPHY, TENDING & JOB PROCEDURES, SEAMANSHIP, MEDICAL ASPECTS, CLOSED CIRCUIT TV, OFFSHORE OIL RIG WORK, AND MORE.**

Licensed by  
The New York State  
Educational Department



**Professional Diving School of New York**

DIVER TRAINING DIVISION OF  
INTERNATIONAL UNDERWATER CONTRACTORS SD-11  
222 Fordham Street  
City Island, N.Y., N.Y. 10464 / 212-885-0600  
Please send me your complete catalog/curriculum and school decal. (Out-of-state residents enclose \$1.00 to cover postage & handling)

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
TELEPHONE \_\_\_\_\_

## THERE'S A REEF OUT THERE...SOMEWHERE

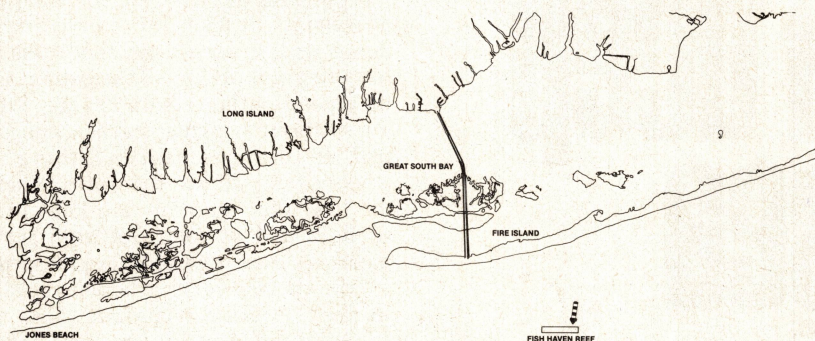
BY ROBERT SCHAEFER

photographs by Robert Schaefer

Empty plastic jugs, cork balls, floats and flags of every size and shape — all homemade markers. They've come and gone. Some were dropped into position with weights and anchors fastened to the end of 75 feet or more of line.

open water check-out in an actual working situation."

The day dawned bright and clear as the R/V *Black Coral* left Bayshore's Maple Street dock with 13 student divers, four instructors, three assistant instructors and me. Captain



Others were tied by divers to rusting, barnacle-covered cleats or overgrown outcrops which might once have been part of a boat, a barge, a car, or even a beer case.

Since 1959, when the artificial reef was begun, approximately three miles into the Atlantic Ocean opposite the old Fire Island lighthouse, divers and fishermen have been locating, marking and losing the reef. Today, under the direction and control of the New York State Department of Environmental Conservation, the reef has grown to over a mile in length and is one of the favorite spots for taking bugs and many kinds of fish. But until recently, only a select group of sportsmen had the sophisticated electronic equipment needed to locate the reef. Other sportsmen with selfish motives removed the homemade buoys which could have provided a beacon for everyone.

Chester Zwacki, associate aquatic marine biologist of the New York State Department of Environmental Conservation, had responsibility for marking the reef so that the greatest number of sportsmen could easily enjoy its bounty — but the agency's budget did not provide funds for such an undertaking. Learning of this, Robert Shourot offered the services of Coastal Diving Academy of Bayshore, Long Island and the 68 foot Research Vessel *Black Coral*.

It was not a totally altruistic gesture," said Shourot in describing his school's volunteer effort. "It would help local fishermen and sport divers, but it also gave our students a chance to get one more

Bob Hersey steered a careful course through the narrow channels that are the only paths across the flats of Long Island's Great South Bay, then out through Fire Island Inlet and eastward. Guided by compass headings and Loran-C coordinates, the *Black Coral* anchored her crew and its scuba equipment directly over a spot on the reef known as The Barge. A small plastic jug, anchored from a previous recent visit, still bobbed low on the surface.

On the way out to the reef, CDA's chief instructor, Bob Wright, explained the dive to the students, using a blackboard propped up on the stern of the vessel to diagram what was about to happen.

"The first team down the descent line is to confirm our position over the reef, and, if possible, secure the down-line to the barge," Wright addressed the class. "Then ascend together and report your findings."

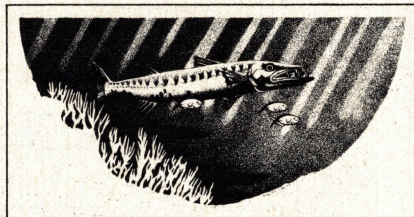
For the next 15 minutes the *Black Coral* looked like a dive shop during a fire sale. Wherever you looked equipment was being tested, sampled, assembled, dissected and donned. Dozens of air tanks, once neatly lined up in deck racks and secure against the roll of the sea, were being lifted over wetsuited heads and shrugged into place on the backs of anxious divers.

The first team poised on the gunnels near the down-line just long enough to check their starting time with scuba instructor Kris Sartori. On this dive, it was her job to keep track of each diver's bottom time to be certain that all students were safely within the no-decompression limits.

The benefits of thorough and



# LIMITED EDITION



"BARRACUDA" by Robin McDonald

This 20" x 16" pen and ink print has been reproduced on fine quality, heavy paper, and each will be accompanied by a certificate of authenticity.

**\$30**

OR, send \$2.00 for complete catalog of special Limited Edition Marine Life Prints.

**GENESIS**  
GALLERIES

Dept. SD11, Post Office Box 114  
Point Clear, Alabama 36564  
205/626-1058

## See-worthy Patches



... designed for and by fellow watersport buffs. Order by number from A-B Emblem, at \$1.00 each. FREE Design-an-Emblem Guide sent with each order to help you create your club's own patch. As specialists in custom emblems, we'll return a quotation on your design, without obligation.

**A-B emblem**  
Division of CONRAD INDUSTRIES  
1 Weaverville Highway  
Box 40695 Weaverville, N.C. 28787



### PRESCRIPTION FACE PLATES

#### FOR DIVERS WHO WEAR EYE GLASSES

My custom-made, hydro-optically ground, prescription face plate is the original and only method of correcting your vision underwater exactly as your eyeglasses do on land without underwater distortion, lens fogging or breakage problems. Precision ground safety lenses permanently bonded to the face plate of any mask with a proven optical epoxy made for underwater use. Personally made by an optician who is a diver. Used and approved by divers in all 50 states, over 40 foreign countries. U.S. Navy, U.S. Army Engineers, and Smithsonian Institute. Send your own mask or face plate with your lens prescription and distance between eyes. Only \$43.50 for my exclusive super extra large, wide angle, king size lenses. Air Mail \$1.50 extra. New masks also supplied. Or send for free literature. Unconditionally guaranteed.

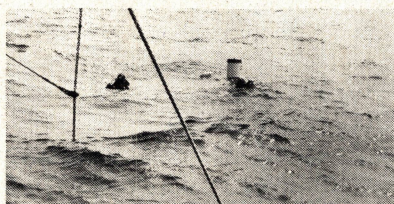
**LEONARD MAGGIORE**  
Optician for Divers

69-03 Fresh Pond Road  
Ridgewood, Queens, NY 11227  
212 EV 6 5339

careful training were obvious as each scuba-equipped diver checked with Kris before entering the water, upon surfacing and again before each additional descent.

Two different classes participated in the positioning and setting of the buoy. Seven students were in their third week of full time training. Six were in their ninth week. All had completed basic scuba training and were working on different levels of open water, deep diving, and advanced scuba, on their way to becoming commercial divers.

While the team selected to fasten



the buoy was making its final preparations — checking turnbuckles and other fittings — other divers were completing training assignments, surveying the reef, diagraming its elements and logging data on marine life for an ongoing study of the relationship between offshore pollution and marine life.

When all teams in the water had returned to the *Black Coral*, the buoy was ready to be put over the side. First, 80 feet of three-quarter inch chain, its top end shackled to the buoy, was dropped overboard. Then two men lifted the six-foot long can, and heaved it over.

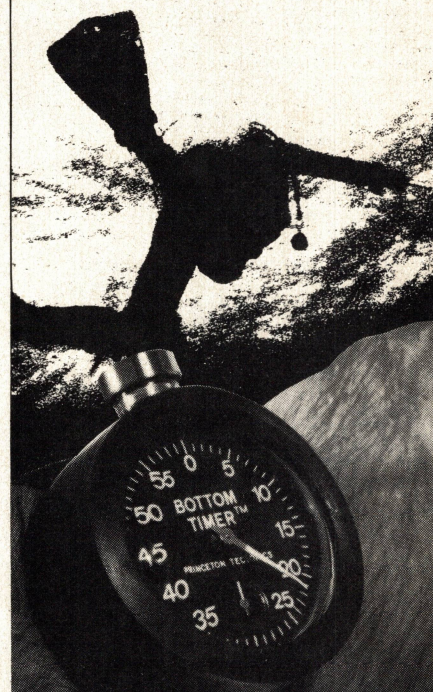
Two divers followed it into the water. Their starting time was logged as they began the final descent of the day.

From the deck of the *Black Coral* the big buoy, now looking like a two-foot long can, moved as if by some mysterious force, across 20 feet of ocean until it rested precisely alongside the tiny plastic bottle. Its bold orange and white stripes and the word REEF stand out in sharp relief, calling to divers and fishermen for miles around, "Here I am everyone — here's the reef."

The last divers surfaced and reported that the bottom of the buoy chain was securely bolted in place. Then one of them handed a piece of light line up to a crew member on the boat who pulled it in until the plastic jug came on board — the last marker likely to be removed from the reef for a long time.

It was a good dive for all concerned. The Department of Environmental Conservation has its reef marked. All sportsmen can now find it. And the students at Coastal Diving Academy added another real-life job to their log books.

# Bottom Timer— the only way to time a dive (automatically)



Bottom Timer is the first & only fully automatic underwater stopwatch. When you reach an approximate depth of five to nine feet, the watch immediately begins to record the time of your dive. No fiddling, no math, no memory lapse—in fact, you can't forget to time your dive, Bottom Timer won't let you.

Bottom Timer features luminous numbers, a big minute hand, remote second hand, a Lexan® inner case with a tough Kraton® outer case, Velcro® strap, chrome plated brass winding stem and optional high altitude adjustment screw and Gage-Mount™. And if you really want to be choosy, Bottom Timer is available in three dial-face colors—orange, blue and basic black.

**This Christmas give Bottom Timer and make some diver happy—automatically.**

SEE BOTTOM TIMER AT YOUR LOCAL DIVE SHOP OR FOR MORE INFORMATION, SEND FOR OUR FREE BROCHURE.

**PRINCETON  
TECTONICS**

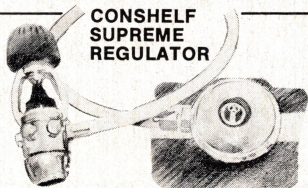


P.O. BOX 764, HIGHTSTOWN, N.J. 08520  
Dealer inquiries welcomed.



# November Specials!

PRICES SHOWN ARE GUARANTEED UNTIL DEC. 1, 1978



**CONSHEF  
SUPREME  
REGULATOR**

A fantastic regulator developed by Cousteau, U.S. Navy approved. Good to 1200 ft. Silicon-filled first stage for smooth inhalation at any depth. Cannot freeze-up at any temperature. Lifetime guarantee.

**CENTRAL SPECIAL \$105.00**

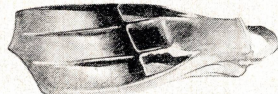
All other regulators on sale.

## LET THERE BE LIGHT

Rugged metal housing—good to 400 ft. Ten flashlight batteries (not included) provide blinding-bright light. Failsafe magnetic switch.

**CENTRAL SPECIAL \$39.00**

All other lights on sale.



## PUT A ROCKET ON YOUR FEET

You won't fly but you'll certainly swim faster and easier. Rocket Fins are used by UDT teams, USMC and the French Navy. Adjustable heel strap for use with or without boots.

**CENTRAL SPECIAL \$16.00**

All other fins on sale.

Underwater life support systems are potentially dangerous, to a non-trained user. These include scuba tanks, regulators and buoyancy compensators. This ad does not constitute an offer to sell these items via mail order.

## NYLON TWO SIDES SUIT

Once we know your height, weight, chest, waist & hips you'll be into a fantastic 1/4-inch suit at a fraction of what you'd expect to pay. Stitched seams. Five zippers. Custom-contoured in stock sizes for men and youths. XS, S, M, L, XL.

**CENTRAL SPECIAL \$89.00**

All other suits on sale.

**1/4" NYLON TWO FARMER SUIT \$109.00**



## U.S. DIVERS BCII BUOYANCY COMPENSATOR

Double-bag construction, lifetime guarantee, and all the features you want. Front pocket, oral and CO<sub>2</sub> inflators plus low pressure scuba connector included.

**CENTRAL SPECIAL \$95.00**

All other buoyancy compensators on sale.

## OIL FILLED DEPTH GAUGE

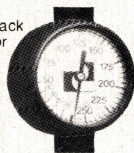
A larger dial face gauge that features black letters on a luminous dial. Oil filled for corrosion-proof accuracy. Rubber strap.

**CENTRAL SPECIAL \$32.00**

luminous oil filled depth gauge and pressure gauge combo.

**CENTRAL SPECIAL \$67.00**

All other gauges on sale.



## CENTRAL SKINDIVERS

2608 Merrick Rd., Bellmore, N.Y. 11710

Phone: (516) 826-8888

Please ship the following immediately.

- |                                     |         |                                      |          |
|-------------------------------------|---------|--------------------------------------|----------|
| <input type="checkbox"/> LIGHT      | \$39.00 | <input type="checkbox"/> 1/4" SUIT   | \$89.00  |
| <input type="checkbox"/> ROCKET FIN | \$16.00 | <input type="checkbox"/> 1/4" FARMER | \$109.00 |
| <input type="checkbox"/> GAUGE      | \$32.00 | <input type="checkbox"/> COMBO       | \$67.00  |

☐ Please send me FREE Giant Discount Catalog.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

## LAW ENFORCEMENT AND DIVING

They came from California, Delaware, South Dakota, Georgia and half a dozen other states to take part in the first international law enforcement school, held in July at Marquette, Michigan.

Twenty-three persons attended the week-long school sponsored by Northern Michigan University's Law Enforcement



Training Center and staffed by some of the top dive instructors in the United States and Canada.

"It was the most comprehensive presentation on scuba diving in law enforcement ever made available," said G. N. Gilles, a participant from the Marathon County Sheriff's Department, Wausau, Wis.

Participant reaction especially pleased Robert Hanson, NMU's director of law enforcement training, who said the course will be continued on an annual basis.

The instructors were Dennis Graver, Santa Ana, Calif., national training director for the Professional Association of Diving Instructors (PADI); Lt. Thomas R. Lewis of the Littleton, Colo., Fire Department, and well known author and lecturer; Cpl. Robert Teather, Vancouver, British Columbia, supervisor of the diving division of the Royal Canadian Mounted Police; Cpl. Ray Porpealia, Ottawa, senior force diver for the Ontario Provincial Police; CBM Don Kriebel of Indianhead, Md., explosives ordinance technician for the U.S. Navy; H. Lee Ballard, loss prevention specialist for the Ford Motor Co., Dearborn, Mich.; Sgt. Clifford J. Ellis, underwater unit commander for the Michigan State Police Training Academy, Lansing; James Martindale, marine safety education supervisor for the Michigan Department of Natural Resources, Lansing; Sgt. William Gassett, K. I. Sawyer Air Force Base, Michigan, and Special FBI Agent Orlin "Lucky" Lucksted, Detroit.

Betty Tomasi of Marquette, training director for the NMU Scuba School, was consulting coordinator, and her husband, George, who is Scuba School director, was special advisor.

Participants received certificates of permanent registry with the NMU Law Enforcement Institute. Divers completing the institute received the first PADI Law Enforcement Diver Certification.

Topics covered included general wa-

## SHARK!

**\$35.00**

Incl. Postage

- sterling silver Shipped with 24" stainless chain
- Unconditional guarantee
- Free Brochures available upon request
- 14kt. Yellow, no chain, \$100.00

(305) 563-5331

**GEMS INTERNATIONALE**

3471 N. Federal Hwy., Suite 408-10  
Ft. Lauderdale, Florida 33306

Manufacturer's Reps and Dealers wanted.

**IT'S THE FIRST** — It's the most comprehensive — It's a **COLLECTOR'S ITEM . . .**  
**skin diver** special section on the U.S. Virgin Islands on sale December 28



## MOVING?

**DON'T MISS A SINGLE ISSUE OF SKIN DIVER!**

Let us know your new address right away. Attach an old mailing label in the space provided and print your new address where indicated.

### QUESTION ABOUT YOUR SUBSCRIPTION?

When you write, be sure to include a label. It helps us serve you more promptly.

### TO SUBSCRIBE OR EXTEND YOUR SUBSCRIPTION —

Check the appropriate boxes below:

- ☐ New subscription. Please allow us up to 60 days to get the first copy into the mail.
- ☐ Renewal subscription. Please include a current address label to insure prompt and proper extension.

☐ 1 year \$10.95 or ☐ 2 years \$19. (U.S., Territories & Military only. Other countries add \$3 per year.)

☐ Payment enclosed or ☐ Bill me (U.S. only)

MAIL TO: SKIN DIVER  
6725 Sunset Blvd.  
Box 3295  
Los Angeles, CA 90028

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

**ATTACH LABEL HERE**

(If label is not handy, print OLD address in this space.)



OUR 25TH YEAR

**SPECIALISTS  
IN  
UNDERWATER  
PHOTO  
EQUIPMENT**



**LET US HELP YOU SELECT YOUR  
UNDERWATER PHOTO EQUIPMENT**

Please write for price quotations on  
cameras, electronic flash units, lenses &  
other accessories.

**WE STOCK MOST MAJOR BRANDS  
OF DIVING EQUIPMENT**

- |                       |               |
|-----------------------|---------------|
| • OCEANIC             | • AQUACRAFT   |
| • FARALLON            | • AQUADIVE    |
| • NIKONOS             | • SCUBAPRO    |
| • SEACOR              | • U.S. DIVERS |
| • IKELITE             | • SEAQUEST    |
| • SUBSEA              | • ALFER       |
| • UNDERWATER KINETICS | • RUBATEX     |
| • TEKNA               | • CRESSI      |

**MAIL ORDERS SHIPPED PROMPTLY  
SEND \$2.00 FOR CATALOGS & PRICES**

• Sales • Rentals • Air • Photography • Diving Vacations

**SUNLAND SPORTS  
DIVE SHOP**

**8677 WILSHIRE BLVD., BEV. HILLS  
CALIF. 90211 U.S.A. (213) 652-4990**

**MIAMI  
Diver's  
Paradise**



- SALES
- AIR
- HOOKAH
- HIGH PRESSURE
- COMPRESSORS

Please Rush Me 1979 Catalog

- ☐ U.S. AQUANAUTS ..... \$2.00  
☐ U.S. DIVER ..... \$2.00

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**U.S. AQUANAUTS**

A DIVISION OF SCORPIO  
ENTERPRISES CO., INC.

971 S.W. FIRST STREET  
MIAMI, FLA. 33130

Open weekdays and Saturday 9 am to 7 pm  
Friday 9 am to 9 pm

Phone (305) 545-9000 or 545-7827

ter safety, dealing with drowning victim's families, specific precautions in recovering victims of a plane crash, the handling of explosives and radioactive materials, and discipline and safety in dive site management.

For information, contact: Robert Hanson Law Enforcement Training Center, Northern Michigan University, Marquette, MI 49855. ✉

**'79 DEMA EXHIBITS SOLD OUT**

All exhibit space for the 1979 DEMA Trade Show and Convention has been sold out since September, making this event the largest exhibition of dive equipment ever. The show will be spread over 33,000 square feet in the New Orleans Grand Hotel, January 20-23, 1979. There will be instructional seminars, repair clinics, equipment demonstrations and evening films.

Dive store dealers will not want to miss this major preview of scuba diving equipment. All major manufacturers will be represented. Also displayed will be dive related products such as boats, photo equipment, clothing and dive accessories. Dive tour agencies will exhibit their services, dive publications will be represented, and instructional agencies (such as NAUI, PADI, NASDS) will be on hand to present the latest techniques in diver education.

Planned get-togethers include a cocktail party hosted by SKIN DIVER Magazine, a breakfast hosted by PADI and a Saturday evening film festival which will feature one of diving's funniest filmmakers, Dick Anderson, presenting his two classics, *Mac the Dog*, and *Gold from the Winfield Scott*.

New Orleans is one of America's most exciting cities. The Grand Hotel is located on historic Canal Street, a quick walk from the famed French Quarter with its fabulous Bourbon Street, Dixieland jazz and great restaurants.

No sporting goods retailer will want to miss this opportunity. If you have not yet registered for the show, here's how you can do it: The fee for dive store dealers, retail sporting goods dealers and their guests is \$10 per person. O.E.M. accounts, vendors to manufacturers, sales reps looking for lines, etc., are registered as guests at \$25 per person.

Once you have registered, with fees sent to DEMA, you'll quickly receive your badges, drink tickets, and agenda. Plus, independent travel agencies will send you information about tours in New Orleans, as well as dive tours after the show. You'll also receive hotel information so that you can make arrangements for your rooms directly with the Grand Hotel. DEMA has also made overflow arrangements with five other hotels in the area, some of them in the French Quarter. To register, write: DEMA, P.O. Box 4067, Irvine, California 92716. ✉

# The shortest distance between two points underwater.



You're down 55 feet and 350 feet from the support boat. It's time to get back. Time to find the boat. But you stay down to avoid a rough surface swim. You know a Wet Beacon marker is secured to the anchor line. It's sending out an ultrasonic pulse. And you scan for the pulse with your Wet Finder, the hand-held, lightweight receiver. Within seconds the Wet Finder LED signal hones in on the marker, fixing your direction. When you surface, you're 4 feet from the bow. Perfect. You're glad you weren't depending on a compass.

The Wet Beacon/Wet Finder diver navigation system. It's new, it's reliable, it's incredibly accurate. It's available at local dive shops.



**WET-BEACON™  
WET-FINDER™**

**Our Special Christmas Offer**  
The Wet-Beacon/Wet-Finder for \$178.25.  
Available from your favorite dive shop.  
Or call Conquest Marketing  
for your nearest dealer. (714) 540-2323



# GLOBAL

Invites you to the friendly world of underwater.



We can help you get along among all our aquatic friends—by supplying you with the necessary diving accessories.

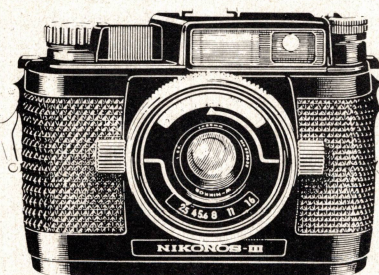
Please contact your local dive store for catalog  
Global Mfg., P. O. Box 4714, Milw., Wisc. 53215

## Underwater photos without a housing!

Just grab your Nikonos III camera and dive in! It's waterproof and pressureproof to depths up to 160'. With its slight negative buoyancy and oversize controls, the Nikonos handles easily under water.

**\$369<sup>00</sup>**

plus shipping



Nikonos III w/35mm f2.5 Nikkor

Prices subject to change without notice.

# HELIX<sup>®</sup>

325 West Huron Street, Chicago, Illinois 60610  
312/944-4400

Join us on a Helix photo/dive trip to Riding Rock on San Salvador Island, March 31 through April 7, 1979. Write now for details on this and other upcoming trips.

## CALL FOR BIG SAVINGS NOW

### 312-725-2155

- ★Divers on hand to answer your questions
- ★Huge selection of name brands
- ★Free catalog flyer
- ★Use your bank charge
- ★Fast delivery
- ★Order by phone

#### Examples of Savings:

- Wet suits from \$49.00
- US Divers Mariner Pack \$23.00
- Giant 15x30 vinyl gear bag heavy duty \$19.95
- Weight belt with 15 lb. vinyl coated weights \$19.95
- US Divers Pro Snorkel \$5.49
- USD Sea Hawk knife \$19.95
- US Divers snorkel \$3.99
- Rocket fins \$16.95
- Watches \$19.95 & up
- Deluxe Cam Pak \$24.99
- US Divers Aquamaster vest \$44.50
- Low pressure T \$9.99



Send your name and address for free flyer and get on our mailing list for continuous super sale flyers:

**SCUBA CENTER** 6059 W. Addison  
Chicago IL 60634

## PADI's COLLEGE IN SAN DIEGO

If you ask Commander Jim Williams why he started the PADI International College in California, he has a number of answers, all of which are sensible:



1. California has a large diving population and there is a need to offer divers a comprehensive PADI resident training facility in Southern California.

2. Southern California's climate, ocean, and offshore islands, coupled with the college's ownership of its own USCG certificated dive charter boat, present a unique opportunity to provide the finest underwater education while also keeping the curriculum filled with fun. One of the college's primary teaching goals is: Make it enjoyable! "That's what sport diving is all about, and it should start here at the college," says Williams.

3. Southern California is a center for many major dive equipment manufacturers and also has a large community of dive institutions (educational, governmental and private), many of which have facilities and personnel which may be drawn on by the college in presenting its educational programs.

4. Along with Jim Williams' plans to form the college, with the approval of PADI's executive committee as a sanctioned training center, came the opportunity to select the finest and most experienced staff. Jack Beasley, the college's general manager and senior instructor, is a 17 year veteran in dive education, sales and promotion, with past association with two major dive college training programs. Dr. James C. Bigler, a PADI Open Water Instructor, is a highly successful businessman with an extensive background in sales, promotion, business management and finance. He agreed to leave a successful conglomerate of business endeavors to his associates in order to personally direct the college's new sales, promotion and management training program. In addition, the college will draw extensively from an impressive roster of dive personalities to provide the finest expertise available.

These are just a few of Jim Williams' reasons. "There are more, but most of all it's the culmination of a life-long dream," says Williams. Since the early 1960's, he has been extensively in-



volved in training sport divers. He has owned one of the largest diving academies in the country, with over 15,000 students certified in open water with a perfect safety record. As a licensed mariner and skipper of his own dive charter boat, he knows the Southern California waters and understands better than most, the needs of the potential underwater instructor. He originated and taught a two-year vocational diving instructor program at Southwestern College and has served as a course director of instructor certification programs for PADI and for NAUI.

The PADI International College in California occupies newly constructed campus quarters on Point Loma immediately adjacent to San Diego Harbor and the college's dive charter boats — only 30 minutes from the beautiful Point Loma kelp beds and 11 miles from the Coronados Islands of Mexico.

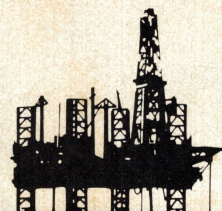
Students can expect a new approach to "learning with fun." A complete modular curriculum, with audio-visual emphasis, coupled with both day and night dive training, will present an exciting program for both instructors as well as divers enrolled in the Master Scuba Diver Training Program or one of the specialty programs.

The Master Scuba Diver Training Program is unique. A basic diver may earn this certification and also be certified as a Specialist in Underwater Photography, Rescue Diving, Search and Recovery, Deep Diving and Equipment Repair. This presents an opportunity for serious-minded divers, from 15 years of age, to come to San Diego for a dive vacation next to none — and an unequalled underwater education.

Instructor candidates taking the Gold Instructor certification program of 10 weeks will find an opportunity to complete all the Master Instructor requirements, except two years of service in PADI and 150 diver certifications. The student who completes this program will be given a PADI International Gold Open Water Instructor chevron. Additionally, he or she will be an instructor specialist in the specialty programs listed in the preceding paragraph. Also, the candidate will be trained as an instructor-salesperson, ready for productive, competitive dive shop employment. An aggressive, lifetime placement service through PADI Training Facilities and resort dive operators has been formulated.

Commander Williams' parting remarks are significant: "There's not enough good competition in this type of business! We intend to keep our programs fun, use modern teaching methods and, since we're in the business of producing salespeople for the dive industry, practice what we preach. We intend to sell a fine curriculum of modular programs that will put a new breath of life into this business!"

# Commercial Oilfield Diving



Commercial oilfield diving requires thorough training. Today commercial oilfield diving is the primary area for our students to enter, performing tasks ranging from inspection dives to saturation systems, in places like Singapore and the North Sea.

At the Commercial Diving Institute we will train you in all the latest types of equipment & techniques used in the field today. Free placement assistance is available.

If you want to be a commercial oilfield diver and are willing to train hard and travel on the job—clip out and mail the coupon NOW and we will send you all the info you need, to take the first step toward this new career in commercial diving.

## Commercial Diving Institute

151-19 6th RD./WHITESTONE, N.Y. 11357  
(212) 767-7800

Please send me your complete catalog, curriculum and Institute decal. I enclose \$1.00 to cover postage and handling. **SD-118**

NAME \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Licensed by The New York State Educational Department  
Member of Association of Commercial Diving Instructors

## DIVEMASTER™ DIGITAL DIVE WATCH

- TESTED TO 750 FEET ■ BRIGHT L.E.D. DISPLAY
- PERMANENT BATTERIES ■ PERMANENTLY SEALED LEXAN MODULE— MAINTENANCE FREE

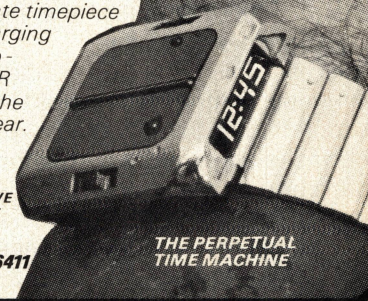
The DIVEMASTER is the most rugged and accurate timepiece ever made, featuring an integral solar battery charging system\* and a unique edgeview display that automatically brightens in sunlight. The DIVEMASTER is programmed for adjustment-free operation to the year 2100 and accurate to within 8 seconds per year. Available in brushed stainless steel at \$129.95 or black ceramic finish at \$159.95. 2 year warranty.



LOOK FOR OUR DISPLAY AT YOUR DIVE SHOP OR SEND FOR FREE BROCHURE  
DEALER INQUIRIES INVITED

337 W. JOHN ST. /HICKSVILLE, NY. 11801/(516) 433-6411

\*Batteries will function for approx. one yr. of use without exposure to light.



THE PERPETUAL TIME MACHINE

## New England Divers 1978 Catalog



Our new 80 page Sport & Commercial Catalog is ready for you now at any of our 10 Retail Stores across the nation...or by contacting our National Catalog Division. Choose from thousands of items selected from the finest manufacturers in the world. See our prices before you buy! Only \$1.00 per Catalog.

### New England Divers National Catalog Division

158 Tozer Road, Beverly, Massachusetts 01915 (617) 922-6970



# Binders



Save and protect all your valuable issues of SKIN DIVER Magazine in this permanent volume.

These durable binders are made of simulated leather with gold embossed title on the cover and spine, and make an attractive addition to your library.

Time to get rid of that unmanageable stack of loose magazines in your living room or study. Each binder securely holds 12 issues of SKIN DIVER Magazine, neatly organized at your fingertips for ready reference. Durable, attractive, and economical—order several for your collection.

**Only \$7.00 each**  
**3 for \$17.50 or 6 for \$30.25**  
**Save 10-20%**

Prices effective through December 31, 1978  
 (Prices include shipping and handling.)

## Petersen Library Binders

6725 Sunset Blvd. Los Angeles, CA 90028

Send me \_\_\_\_\_ SKIN DIVER Binders at \$7.00 ea, 3 for \$17.50 or 6 for \$30.25 (Postage and handling charges included. Calif. residents add 6% sales tax). My check or money order for \$ \_\_\_\_\_ is enclosed. To avoid delay—Print Clearly

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Allow 4-6 weeks for delivery SD-11 78

## Tune In With The WET BEACON

BY JOHN COLUMBIA

Getting from point A to point B underwater has never been easy. As any good diver knows, your compass never seems to work as well as it did during your advanced open water check-out dives. And, Mother Nature has a host of tricky navigational spoilers from strong currents to visibility reminiscent of well-creamed coffee.



photograph by PPC staff photographer Pat Brolier

Most divers can depend on only one thing — conditions are rarely perfect — a good reason to equip yourself with a set of Wet Beacon™/Wet Finders™, manufactured by Sound-Wave Systems and available from Conquest Marketing. With these little electronic marvels you can navigate underwater with amazing accuracy.

The Wet Beacon/Wet Finder system is a sporting version of equipment that has been used for years by commercial and military divers. "Pingers," as they are commonly known, are used to mark drone aircraft shot down during maneuvers; deep oil rig divers and pipelines; they even helped position the *Glo-mar Explorer* while it recovered a Russian submarine from 18,000 feet of water. Comparatively simple devices, they are two part units consisting of a transmitter that broadcasts sound of a specific frequency and a receiver tuned to that frequency. The acceptance angle of the receiving microphone can be fine-tuned to an incredibly narrow cone for precise direction finding. Thus, objects marked with pingers can be followed or returned to time and again regardless of time of day or surface conditions.

What makes Sound-Wave Systems' product so original is its step forward in miniaturization. Both the Beacon and Finder measure a mere six by two inches and yet give the average diver the ability

## Attention Diving Clubs

SKIN DIVER has a special diving club rate available for group orders. (Magazine will still be delivered to each member's home.)

### skin diver

6725 Sunset Boulevard  
 Los Angeles, CA 90028  
 Attention: Jack Thompson

Please send details on SKIN DIVER's club subscription rate.

Club Name \_\_\_\_\_

Your Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ ZIP \_\_\_\_\_

## PHOTOGRAPHERS

ELIMINATE wrong exposures! Get easy to read exposure guide for your make and model strobe, mounts outside housing, eliminates slide rules and calculations. Valuable tips from award winning pro FREE with order. Send \$5 per guide or Master Charge No. with signature, expiration date, amount and return address to:

**UNDERWATER PHOTO AIDS**  
 Box 818 Marathon, Fla. 33050



### PREGNANT DIVERS

IF YOU HAVE BEEN PREGNANT SINCE SCUBA CERTIFICATION AND WITHIN THE LAST FIVE YEARS, YOU ARE NEEDED TO PARTICIPATE IN A RESEARCH STUDY.

YOUR HELP IS REQUESTED REGARDLESS OF WHETHER OR NOT YOU DIVE WHILE PREGNANT. TO RECEIVE A QUESTIONNAIRE OR TO OBTAIN MORE INFORMATION PLEASE CONTACT:

Margie Bolton  
 3311 NW 30th Ave.  
 Gainesville, Florida 32605

## SHARK ATTACK

by H. DAVID BALDRIDGE, PhD CAPTAIN, U.S. NAVY (Ret.)

SPECIAL ATTENTION TO DIVERS AS ATTACK VICTIMS. Definitive analysis of 1165 true attack reports. Excerpts from over 200 cases. Based on years of research by U.S. Navy. Over 2 million American paperbacks. Six foreign editions. Few remaining copies limited HARD-COVER edition. Only direct from author. Collectors edition.

CAPT. H.D. BALDRIDGE USN (Ret.)  
 P.O. BOX 15216  
 SARASOTA, FLORIDA 33579

SWIMMERS  
 DIVERS  
 SURFERS  
 FISHERMEN

Check or M.O. for \$8.95 plus \$1.00 postage and handling. Fla. tax 36c. Sorry, no CODs.

## NATIONAL SCUBA REPAIR

DIVING EQUIPMENT REPAIR IS OUR ONLY BUSINESS

3 DAY SERVICE  
 Regulators ..... \$10.00 (1-hose) ..... \$12.00 (2-hose)  
 Valves ..... \$ 4.50 (K) ..... \$ 7.00 (J)

All Prices Are Plus Parts  
 SEND YOUR EQUIPMENT NOW  
 OR WRITE FOR COMPLETE PRICE SHEET  
 DEALER INQUIRIES INVITED

16442-B Gothard St., Huntington Beach, Ca. 92647

**TAKE SDM'S**  
**BEGINNERS COURSE IN**  
**U/W PHOTOGRAPHY**  
**and learn how to put on a**  
**professional slide show**

in the December  
**skin diver**



## Hunt for the **KING OF THE SEA**



in the December  
**skin diver**

### NEW!! → **SAC-RATE™** Increase Your Down-Time! **CALCULATOR**

Precision, heavy gage plastic—quickly computes Surface Air Consumption Rate, a sophisticated indicator of diving skill and aerobic efficiency (like an underwater 'mileage' rating). For expert divers, students, instructors. Predicts down-time, rates performance. \$4.95 Pp. **VISTAR, BOX 14963, AUSTIN, TX 78761**  
DEALERS WELCOME—WRITE FOR QTY. PRICES



### DIVE WITH

## **SUPER SNORKEL**



#### INCLUDES:

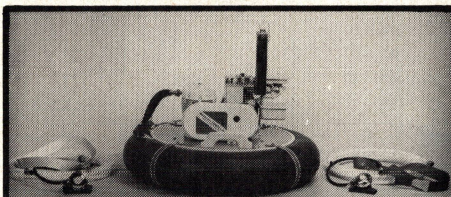
- diaphragm compressor
- 3 h.p. 4-cycle engine
- 2 demand regulators
- 2 hoses (40' each)
- float inflator
- diver's flag

- Stores in space 19"x19"x13"
- Quick set up without tools
- Light weight: < 40 lb.

**ONLY \$415.00\***

**INNOVATIVE DESIGNS INC.**  
1870 Oak Creek Dr., Dunedin, FL 33528  
(813) 784-5349

\*Plus Shipping  
Fla. residents add 4% tax



## **HOOKAH DIVERS** DIVE WITH **BROWNIE'S THIRD LUNG**

**Price \$412.00** — Including 2 Regulators, 2 hoses and 2 harnesses. Four other models available. For brochures send self-addressed stamped envelope to:

**W. C. BROWN COMPANY**  
2370 SE 11th St., Pompano Bch., Fla. 33062  
Ph. 305/942-3205

to track or navigate to an object from distances of up to 100 meters. The Wet Beacon is cast from bright yellow polycarbonate plastic and the receiver is shiny black. Both are powered by a conventional nine-volt transistor radio battery and both are activated by twisting a knurled area on one end. The receiver has a blister on one side which contains a bright red, light emitting diode.

The transmitter has two pulse settings which enable a single navigator to distinguish between two objects — the fast setting might be worn by his buddy and the slow setting might represent the object being sought. The slow pulse is usually reserved for long term deployment of the Wet Beacon — up to four months with a heavy duty battery. Since the rate of pulse determines how fast the Finder adjusts the angle of acceptance to the signal, most divers will use the fast setting. Our tests showed that the Finder adjusted to its narrowest angle after about 15 flashes of the receiving diode.

Operation of the Wet Finder couldn't be simpler. Turn it on and move in a circle until the diode begins flashing regularly. Intermittent flashes mean that you are picking up stray signals of its tuned frequency. There is an excellent discriminator circuit built-in which does an excellent job of screening out most unwanted signals. The longer you swim in the direction of the Wet Beacon, the more accurate you can navigate. There are some conditions you should be aware of that will affect the performance of your units — large objects such as shipwrecks and kelp can deflect or soak up the sound signal. Rocky bottoms also seem to break up or weaken the Wet Beacon's signal. For best navigation in these areas we recommend that you try and get your directional reading at a slight downward angle about ten feet above the bottom. Divers wearing the Beacon can help by attaching it to their tank valve or ankle — wearing it on your weightbelt will cause your body to soak up much of the signal.

Once purchased, the Finder/Beacon system has many uses for the sport diver. Locations can be marked for later return — a boon for wreck divers who prefer discrete plunder or lobster divers who always find a glory hole when they're out of air. Buddies, each equipped with a full set, can separate and re-locate with ease. When reef hunting, the Beacons can remain silent until the reef is found and then turned on to attract the res. of the divers. Attached to a multi-thousand dollar camera outfit it is cheap insurance if the gear has to be ditched or is lost.

The complete Wet Finder/Wet Beacon system sells for around \$200 at better dive shops. If you are an active diver or serious U/W photographer we recommend that you add a set to your gear bag — you'll find it has some good uses!

# **COASTAL DIVING ACADEMY**

## **BAY SHORE, NEW YORK**

To meet the unprecedented demand for qualified undersea workers, Coastal Diving Academy is doubling the number of starting classes in its deep sea commercial diving course.



**95.5% of Coastal Diving Academy graduates work in the diving industry**



### **COASTAL DIVING ACADEMY**

108 W. MAIN STREET, SD-11  
BAY SHORE, NEW YORK 11706  
(516) 666-3127

Member of Association of Diving Contractors;  
Association of Commercial Diver Education;  
Private Vocational Schools Association  
of New York, Inc.

Licensed by the New York State  
Education Department

Approved for training of veterans by  
the New York State Education Department

### **COASTAL DIVING ACADEMY**

108 W. MAIN STREET, SD-11  
BAY SHORE, NEW YORK 11706  
(516) 666-3127

Here's \$1 to cover costs. Please send me your catalog of courses and other literature about commercial diving career training.

- ☐ Deep Sea Commercial Diver
- ☐ Diver Technician - Tender
- ☐ Underwater Photography
- ☐ Commercial SCUBA and SCUBA Instructor

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_ Age \_\_\_\_\_

Telephone (area code) \_\_\_\_\_ ) \_\_\_\_\_



## NEW METHOD!

Only \$42.50



20/20 vision underwater with prescription faceplate lenses. The method of bonding lenses to the mask is the only one which corrects exactly as your glasses do.

Individually analyzed by an optometrist experienced in the problems of under water vision. Lenses as large as any manufactured. Used by U.S. Navy underwater training facilities as well as State agencies. To order send copy of prescription, distance between eyes, and mask or plate only. Prescription swim goggles also available. Bifocals, \$14.00 extra. Air mail \$1.00 extra. WE CAN OBTAIN COMPLETE INFORMATION FROM YOUR GLASSES. SEND FOR FREE LITERATURE. UNCONDITIONALLY GUARANTEED.

**A. S. NEWTON, O.D.**  
575 6th St., San Pedro, Calif. 90731, 213-832-7300

## 47th STREET NIKON, CANON AND IKELITE UNDERWATER PHOTO COMBINATIONS



### NIKONOS III w/35mm lens....\$349.50

Pentax ME w/1.7 w/5536 Housing.....	379.50
TOSHIBA TM-1 Under Water Flash.....	113.90
Polaroid SX70 w/ #5870 Housing.....	168.50
Olympus OM 1f1.8 w/ #5565 Housing.....	379.90
Canon G11 w/ #5617 Housing.....	184.90
Canon AE1 w/1.8 w/ #5372 Housing.....	419.90
Canon F1-N w/50mm f1.8 SC Lens & #5570 Housing.....	554.50
Minolta 201/1.7 w/ #5560 Housing.....	369.50
Konica C35 w/ #5383 Housing.....	149.90
Konica TC f1.7 w/underwater Housing.....	334.50
Minolta 110 SLR zoom w/ #5372 Housing.....	279.50
Yashica TL Electro w/ #5581 Case.....	264.50
Sunpak 311 w/4533 Housing.....	109.50
Canon 514XLS 7.5-60mm f1.4 & #5716 Housing.....	394.50
New low lite Canon 310XL & #5713 Housing.....	219.50
Vivitar flash 283 w/ #4228 Housing.....	139.50
Kodak Pocket 708/ 5369 Housing.....	109.50
Sekonic L164 Marine Meter.....	114.90
Honeywell 682S w/Housing.....	159.00

We carry the full Ikelite line • Call or write for our low, low prices.

Send your inquiries to: Dept. W



**PHOTO INC.**  
TEL (212) 260-4410

67 W. 47 Street, New York, N.Y. 10036

Toll Free Orders Only **800-223-5661**



## SCUBA SIGNET RING

Complete with your name and diving degree if desired. Rings available in 10K and 14K Gold or Sterling Silver. Priced from only \$85.00. Available as stickpin also! Write for free color brochure. 100% guaranteed. Many styles available.

**GOLDCRAFT**  
DEPT. S BOX 271 WESTFIELD, IN 46074



## Introducing Petersen's New HOME REPAIR & MAINTENANCE GUIDES

● 6 comprehensive volumes, 96 pages each, that show you how-to repair and improve your home easily and inexpensively. ● Perfect for the do-it-yourselfer and save money! ● Fact-filled easy-to-use with 1000's of photos, illustrations and charts make each job a snap. ● Covers every aspect of home maintenance and improvements. ● Satisfaction Guaranteed or your money back!

**PETERSEN BOOKS**  
Dept. SD-B 6725 Sunset Blvd.,  
Los Angeles, CA 90028

Yes! Rush me \_\_\_\_\_ sets of Petersen's 6 brand new HOME REPAIR & MAINTENANCE GUIDES @ \$17.70 (plus \$1.30 shipping and handling. Calif. residents add 6%—\$1.06 sales tax). My full payment of \$ \_\_\_\_\_ is enclosed.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Allow 4-6 weeks for delivery. Offer void 1/31/79

## MEXICAN OFFICIAL TO SPEAK AT IQ-10

Professor Ricardo Presbitero, head of Sport Fishing and Aquatic Recreational Activities for the Mexican government, will speak about sport diving in Mexico at IQ-10 in Anaheim, California, Saturday, November 11. His talk, supplemented by photographs, will present information about Mexico's dive attractions, facilities, equipment, instruction, transportation, hotels, and regulations governing diving, fishing and underwater sanctuaries.

A professional diver since 1957, Presbitero is also a scuba instructor and a master scientific diver. He was involved in several exciting underwater projects — including Sea Lab II, Tektite II, and the operation of Cousteau's minisub *Denise* and the research sub *Deepstar* — and is professor of underwater engineering at the University of Mexico.

Presbitero was the prime government contact in re-opening Baja California dive sites to North American divers. At IQ-10, he will reiterate his country's invitation for all divers to dive Mexico and enjoy her underwater world.

Presbitero is the featured speaker in IQ-10's series of presentations entitled "Dive the Americas," which will pictorially portray diving from Mexico to Canada and from Maine to Hawaii. Other diving personalities, such as Jack McKenney, will be on hand from November 9 through 12 to entertain and enlighten the audience of divers.

For information on IQ-10 and Divers' Sunday at Disneyland contact: IQ-10, P.O. Box 630, Colton, CA 92324.

## SILENT FOREST WINS ACCLAIM

*Silent Forest*, a documentary film demonstrating the beauty and importance of life found in the Pacific Coast kelp bed community, has recently won several awards. In addition to the Golden Eagle award, the film has been selected by the Council on International Non-Theatrical Events to represent the United States in motion picture events around the world.

Also, the Information Film Producers of America (IFPA) awarded the film two bronze medals (one in Ecology, the other in Science) during its 1978 Cindy competition.

The film's producer, Lewis Trusty, resides in Newport Beach, California, and specializes in all phases of educational media productions.

For information, contact: Trusty Productions, #2 Torrey Pines Lane, Newport Beach, CA 92660.



"I think we've found a virgin reef. . .  
I haven't seen a beer can all day!"



## COMMERCIAL DIVING HORIZONS

Our eastern seaboard is the site of new offshore oil drilling operations. Experts predict a possibility of 35,000 new jobs in the years to come. A career in commercial diving will prepare you for this rewarding profession. Divers Academy curriculum has a proven ten year track record. All training is under the direction of Divers Institute of Technology. Divers Academy is approved for training students under the Comprehensive Employment & Training Act (CETA) and meets state certification and safety standards.

Send \$1.00 for Complete Information

**DIVERS ACADEMY OF THE EASTERN SEABOARD**

2500 SO. BROADWAY • CAMDEN • NEW JERSEY • 08104 • (609) 966-1871

Owned and Operated by Divers Institute of Technology Management



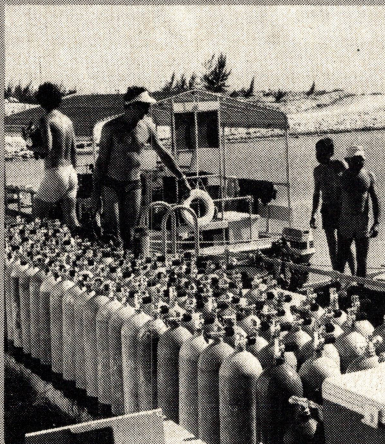
# SDM TRAVEL SECTION

## WHERE TO GO/HOW TO GET THERE/WHAT TO DO

**T**he travel industry is currently enjoying a banner year because airlines are continuing to offer reduced air fares with savings up to 60 percent. The result is that more and more divers are beginning to travel to exotic dive destinations they previously could not afford.

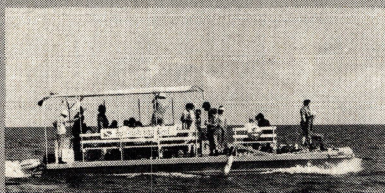
Because of this increase in traffic to many Caribbean resorts, there is a growing awareness by the diving public that not all resorts are the same. Most hotel travel brochures seem to come out of the same mold: with the same pretty color pictures and poetic phrases but with little information for the experienced diver to make a sound evaluation. This leaves you with the haunting fear of ending up on some remote tropical island with a broken-down compressor, a bunch of rusty tanks and a pile of ratty old snorkeling gear — and no way to go diving. How then can you pick a resort hotel that offers a good scuba diving program?

Current confusion over what constitutes a real dive resort is caused by a problem in semantics. The travel industry is catering to two distinctly different types of divers, with different needs. The first type is the "tourist diver:" a person with only a casual interest in doing a little snorkeling or taking an introductory scuba lesson. Most hotels are only after business from this tourist diver because his demands and requirements can usually be handled by the average beach boy (uncertified instructor) and a minimal amount of equipment. The second type of diver is the hard core diver who is already certified and wants to take a vacation that gives him superb diving and lots of it. The experienced diver demands much more than the tourist diver and, has certain expectations in the way of



### HOW TO CHOOSE A DIVE RESORT

BY GERI MURPHY



photographs by Geri Murphy

equipment, facilities, and dives for his investment. There are a growing number of resort hotels catering to this kind of diver.

Most hotel travel brochures do not reveal whether their dive program is geared for the tourist diver or the hard core diver. And, since the resort is several thousand miles away from you, it seems the only way you are going to find out exactly what is happening is to make the trip. There is a better and far less expensive way to avoid disappointment if you are willing to do your homework and take the time and trouble to investigate. Don't make a choice on impulse alone. Get the

facts first. The best way to do this is to ask a series of in-depth questions. Write a letter directly to the resort, and start early. Overseas mail is notoriously slow and you should allow four to six weeks for an answer. If you are short on time, place an overseas telephone call to the resort or make contact with the hotel's appointed representative here in the United States. Most serious minded resort hotels advertise in SKIN DIVER Magazine and their overseas addresses and stateside telephone numbers are listed in those ads. If you cannot find a hotel you are looking for in a current issue, check back issues.

The key to successfully choosing the right resort is knowing what to ask. Here are just a few basic questions which you may want answered in your search for a dive resort that will meet your needs:

**SCUBA FACILITIES** — How many tanks, regulators and weight-belts are available versus the number of guests at the hotel? In other words, if the hotel can accommodate 150 divers and there are only 20 tanks available, you know it is not seriously in the dive business. Inquire also about the number and size of air compressors, and the age, make and model of the dive gear.

**DIVE BOATS** — Type of boat(s), ie: Boston whaler, inflatable Zodiac, fishing boat, inboard, outboard? What is the length of the dive boat? How fast does it cruise? How many divers does it carry? Is there a good dive ladder?

**TRIP TO REEF** — How far is it from the hotel to the dive sites? How long is the average boat trip? How do you get from the hotel to the dive boat?

**AMOUNT OF DIVING** — How many scuba dives each day: one



## DIVE RESORT CHOICE

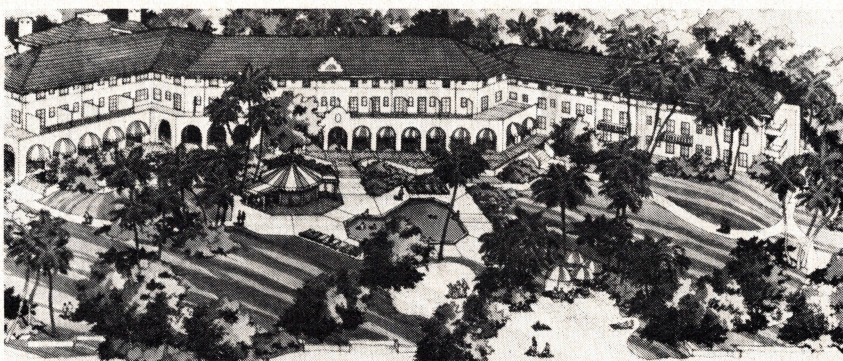
tank dive, two tank dives, three tank dives? Are there any night dives? If so, how many per week? Is it necessary to bring an underwater light or is it furnished by the resort?

**TYPE OF DIVING** — Is there any wreck diving? What kind of wrecks, and how deep are they? Any drop-off diving? Depth range of drop-offs? How about coral caves? Temperature of water? Is a wetsuit needed?

**QUALITY OF DIVING** — Range of average underwater visibility? Kinds of fish usually seen? Are the coral reefs healthy?

The answers to these questions and others you may think of should help you in choosing a dive resort which suits your needs. Remember, all dive resorts are not alike, nor do they cater to the same diver clientele. This little quiz will filter out those hotels that do not have a serious scuba diving program. Beware of hotels which provide vague answers or incomplete information. Chances are they don't really understand the kind of program you are searching for.

Barring any unforeseen calamities such as tropical storms, compressor breakdowns or boat problems, you should have a great time. Just remember one thing. Travel is



like playing "diver roulette" — you pay your money and take your chances. Hopefully, with a little prior investigation, the odds will be in your favor. »

## CASA MARINA OPENS IN KEY WEST

The elegant Casa Marina resort, the social nerve center of Key West and Monroe County during the 1920's, will have a two-phased re-opening this winter season after a \$10 million renovation program, currently underway.

Facing the Atlantic with approximately 1100 feet of ocean beachfront, the hotel occupies a 6.5 acre site on the southeast corner of Reynolds and Seminole streets in Key West. It will reopen as Marriott's Casa Marina Inn.

A new wing of 150 modern rooms, built along Seminole Street, is scheduled for an early spring opening. A 600 person convention center is under construction between the new wing and Henry's Restaurant. The Keys Ballroom will have soundproof partitions forming rooms to accommodate five simultaneous meetings, and a highly sophisticated sound and lighting system will be installed in the new convention hall.

Other facilities will include a game room and an exercise room, a gift shop, outdoor swimming pool, lighted tennis courts and a private beach. The hotel is convenient to marinas, charter fishing, scuba diving, historical sightseeing tours, and shopping in Old Key West's Mallory Square. »

# Poseidon Ventures **DIVE TOURS** RED SEA DIVING-ISRAEL

**DIVE THE HISTORIC TIP OF THE SINAI - RAS MUHAMMAD, STRAITS OF TIRAN AND SHARM EL SHIEK. Come and experience diving like you have never seen before with Poseidon Ventures, specialists in world wide diving excitement. Take advantage of the new low air fares from New York to tailor your own personal diving vacation adventure.**

**WE OFFER COMPLETE SERVICE WITH EVERY POSEIDON VENTURES TOUR, COMPARE AND SAVE:**

- All new U.S. and European diving equipment
- All diving from new, specially designed boats with trained dive guides.
- Diving provided by the famous RED SEA DIVERS
- Daily breakfast
- Top quality modern hotel accommodations
- Guided tour of Jerusalem
- No hidden fees
- Departures arranged from anywhere in the U.S.



**Send Coupon for FREE RED SEA DIVING POSTER**

### ADDRESSES:

#### Mid-West

News Tours/Underwater  
5915½ W. Irving Pk Rd.  
Chicago, Ill. 60634  
(312) 286-7855

#### East Coast

Air-Sea Explorers  
41 E. 42nd St.  
New York, New York 10017  
(212) 687-7250

Send to: POSEIDON VENTURES TOURS sd11/78  
359 San Miguel Dr., Newport Bch, CA 92660

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

PHONE \_\_\_\_\_



# Diver's Directory



Advertising rate is \$70 for three consecutive ads, \$120 for six consecutive ads, \$185 for a full year. **PAYMENT MUST ACCOMPANY COPY.** Send all material to Diver's Directory, c/o Skin Diver, 8490 Sunset Boulevard, Los Angeles, California 90069.

## ALASKA

**ALASKA AQUATIC DIVE CENTER** 503 Water Street  
NASDS - Instr. - Full Svs SCUBAPRO - air - rntls - repair  
2 man chmbr - hydro - tumble - boat trips - catalog sls  
C card reqd - 907/225-5020/225-DEEP: Bx 5020 Ketchikan AK

**ANCHORAGE DIVE CENTER** (907) 277-DIVE  
607 1 St., Anchorage, Alaska 99501  
PADI-NAUI, NAUTIC Basic & Advanced Training  
Air, Repair, CHARTERS & Equipment Sales

## ARIZONA

**AQUA-SPORTS**  
4230 E. Indian School Road, Phoenix, Arizona (955-4120)  
12644 N. 28th Dr., Phoenix, Arizona (942-9230)  
Instruction - Air - Rental - Sales - Trips

**ARIZONA DIVERS SUPPLY, INC.** 602-265-9325  
1811 East Indian School Road, Phoenix, Arizona 85016  
Rentals - Dive Trips - Instruction - Sales  
Repair - 3500 PSI Air Station

**TUCSON SCHOOL OF SCUBA DIVING — SCUBA COVE**  
3575 East Speedway, Tucson, Arizona (602) 795-1440  
Sales - Service - Instruction - NASDS  
Photo Courses and Equipment - Indoor Pool - Trips

## ARKANSAS

**JORDAN DIVING SERVICE** (501) 499-7348  
Jordan Landing, Lake Norfolk, Arkansas 72548  
Dive Boats, Group Rates, Air/3500, Wreck Dive  
30 Ft. Visibs, Camping, Sand Beach, Marina, Rentals

## CALIFORNIA

**CALIFORNIA SKINDIVING SCHOOLS**  
9762 Magnolia Ave., Riverside 714/689-2422  
1173 N. "E" St., San Bernardino 714/885-1416  
EQUIP. SALES, RENTALS, REPAIRS, AIR

**CALIFORNIA SKINDIVING SCHOOLS**  
1083 N. Harbor, Anaheim 714/991-DIVE  
4420 Holt Blvd., Montclair 714/621-4171  
COMPLETE INSTRUCTION IN OUR OWN POOLS

**ARCADIA POOL & DIVE** (213) 447-8181  
21 W. Duarte Road, Arcadia, Calif. 91006  
Sales, Rentals, Repairs  
Instruction, Charters, NASDS

**BAMBOO REEF ENTERPRISES**  
1111 University Ave., Berkeley, Calif. 415/548-7560  
584 - 4th Street, San Francisco, Calif. 415/362-6694  
1959 W. San Carlos, San Jose, Calif. 408/275-1696

**PROFESSIONAL S.C.U.B.A. REPAIR** 769-1484  
5725 Cahuenga, North Hollywood, Calif. 91601  
Professional Repair is Our Only Business  
Servicing All Makes & Models of Equipment Since 1961

**SCUBA SCHOOLS ANAHEIM/LONG BEACH/OCEANSIDE**  
1640 W. Lincoln, Anaheim CA 956-5540  
4740 P.C.H., Long Beach CA 433-6765  
129 S. Hill, Oceanside, CA 722-2455

**LAGUNA SEASPORTS**  
925 N. Coast Highway, Laguna Beach (714) 494-6965  
1951 Newport Blvd., Costa Mesa (714) 645-5820  
NAUI - PADI - RENTALS - AIR

**LAGUNA SEASPORTS\***  
7066 Van Nuys Blvd., Van Nuys, (213) 787-7066  
18503 Hawthorne Blvd., Torrance (213) 542-8609  
3335 Motor Ave., West Los Angeles (213) 559-7771

**SCUBA DUBA DIVE**  
7126 Reseda Blvd., Reseda, CA 91335 881-4545  
12538 Ventura Blvd., Studio City, CA 91604 761-7833  
Boat trips, Sales, Rentals, Repairs

**DIVING LOCKER** 1020 Grand, San Diego 714/272-1120  
155 So. Highway 101, Solana Beach 714/755-6822  
348 E. Grand, Escondido 714/746-8980  
1148 Delevan Dr., San Diego 714/231-8331

**AL'S SPORTING GOODS**  
750 Price Street, Pismo Beach, CA 773-4794  
Front of Pier Cayucos, CA 995-3748  
Air - Instruction - N.A.U.I.

**OCEAN SPORTS, LTD.** 714/840-4840  
16446 Bolsa Chica, Huntington Beach, CA  
Sales - Rentals - Repairs - Air - Surfboards  
NAUI - PADI - Dive Trips

**NEW ENGLAND DIVERS — SAN FRANCISCO** (415) 434-3614  
110 The Embarcadero, San Francisco  
Service, Sales, Instruction, Trips  
Open 7 Days a Week/Til 9 pm on Fri. & Sat.

**SEA-TO-SEA SCUBA SCHOOL** (714) 825-2502  
10950 S. Mt. Vernon, Colton, Ca. 92324  
NAUI, PADI, YMCA Instruction - all levels  
Sales-Repair-Rental-Travel Pkgs. - 4000 PSI Air Station

**WALLIN DIVE STORE** (415) 592-7606  
1656/58 El Camino Real, San Carlos, Ca 94070  
U/W PHOTO SPECIALISTS - AIR - INSTRUCTION  
Rentals-Repairs-Travel-Marine Art-Books-Jewelry

**CATALINA DIVERS SUPPLY**  
Avalon, Catalina Island 90704 213/510-0330  
Rentals - Sales - Air - 2 Locations  
Pleasure Pier & Avalon Underwater Park

**SPORT CHALET DIVERS**  
920 Foothill, La Canada, Ca. (213) 790-2717  
SALES - RENTALS - REPAIRS - CHARTERS  
3300 PSI, L.A. COUNTY-NAUI INSTRUCTION

**NEW ENGLAND DIVERS — LOS ANGELES**  
11830 W. Pico Blvd., West Los Angeles (213) 477-5021  
Take Bundy off Santa Monica Freeway to Pico Blvd. Open  
7 days. Mon-Sat. (10 am to 8 pm) Sun. (9 am to 5:30 pm)

**NEW ENGLAND DIVERS — SAN DIEGO**  
3860 Rosecrans St., San Diego (714) 298-0531  
8363 Center Dr., La Mesa (714) 462-4570  
Open 7 Days. Weekly Boat Trips.

## COLORADO

**ROCKY MOUNTAIN DIVING CENTER LTD. Ph.: 303/232-2400**  
1920 Wadsworth Blvd., Lakewood, CO 80215  
INSTRUCTION - REPAIR - RENTAL - AIR  
RETAIL - HYDROTESTING - TRAVEL

**COLORADO SCUBA SCHOOLS**  
32nd Quebec St., Denver Airport (674-4449)  
Audio-Visual Course, Large Pool and Food Facilities  
Equipment - Sales - Service - Jet Trips - PADI INSTRUCTION

## CONNECTICUT

**ORBIT MARINE SPORTS CENTER** (203) 333-DIVE  
3273 Fairfield Ave., Bridgeport, Conn. 06605  
Tel. (203) 333-DIVE - Sales - Rentals - Air - Dive Trips  
Hydro - NAUI Instruction - Visual Inspection. Open All Year!

**SEA WOLF DIVER'S SUPPLY** Phone 873-8135  
Town Street, Route 82, East Haddam, Conn. 06423  
Sales - Certified Instruction - Rentals - Repairs - Air  
A Full Service Dive Shop

**INNERSPACE DIVING SUPPLY CO., INC.**  
598 Center St., Manchester, CT (203) 646-2352  
Air - Sales - Rentals - Repairs - Hydro - Planned Dives  
Certified Instruction in all levels-NAUI-PADI-YMCA

**SCUBA SHACK OF CONNECTICUT LTD.** (203) 563-0119  
Sales-Service-Salvage-Rentals-Hydro-Lessons-Air to 5000PSI  
Expert advice-All major brands-DIVING IS OUR ONLY BUSINESS  
1839 Silas Deane Hwy, Rocky Hill, CT-1/2 mi. So of Exit 24 Rt. 91

**THE DIVING BELL** (203) 775-3573  
Route 7, Brookfield Plaza, Brookfield, CT  
Sales, Rentals, Repairs, Air Hydrotest, etc.  
Certified Instruction — DIVE LAKE CANDLEWOOD

**UNDERWATER SWIMMERS, INC.**  
526 Main Street, West Haven, Connecticut (203) 932-0258  
Scuba Lessons, Equipment Supplies, Air, Repairs,  
Commercial Work, Rentals, Hydro Testing

**AQUA SPORTS, INC.** (203) 464-7878  
Rt. 12 & Long Cove Road, Gales Ferry, CT  
Sales - FULL SERVICE Professional Dive Shop  
Instruction - All Types, Commercial Work Done.

**JACK'S DIVE CENTER**  
Rt. 10, Plainville, Conn. 06062 (203) 747-3170  
Sales - Service - Instructions - Rentals - Trips  
5,000 PSI Air - AGA Divator - HOME OF FREE DIVES

**A-1 DIVING CENTER** 755-9772 or 756-8451  
863 Meriden Road, Rt. 66, Waterbury, Conn. 06705  
Hydrotests - Repair - Rentals  
Certified NAUI & YMCA Instruction-Wholesale & Retail

**TRI-CITY DIVERS** 872-6547  
Route 30, Post Rd. Plaza, Vernon, Ct - Exit 96 off I-86  
Sales - Rentals - Repairs - Air - Instruction - Trips  
NAUI - PADI - Noon to 8 Daily, Sat. 10 to 5:30

**SKI & SCUBA SHOPPE** (203) 377-6969  
Foot of Broad St., Stfd. Marina, Stratford, CT  
Professional Instruction - All Levels  
Full Service, All Year, Dive Trips To Everywhere

## FLORIDA

**UNDERSEAS, INC.** (305) 872-2700  
Box 319, U.S. 1, Big Pine Key, Florida 33043  
Equipment - Air - Rentals - Repair - Reef Charters - Shelling  
Guides - Photo - Spearfishing - Tropical Fish Collecting

**MILEO PHOTO SUPPLY, INC.**  
2105 Ponce de Leon Blvd., Coral Gables, Florida  
Toll-Free In Florida - 1-800-432-2384; Miami 446-0855  
Underwater Photo Equipment and Supplies

**PLANTATION INN MARINA** 904-795-5797  
Box 1093, Crystal River, Fla. 32629 - Rental-Boats-Canoes-  
Scuba-Night Diving-Package Deals-Private Manatee Obser. Deck  
& Air Sta. @ Divers Giant Spring. Golf/Tennis-100 Rm. Hotel

**HERB'S DIVE SHOP** 253-7221  
2434 S. Atlantic Avenue (AIA), Daytona Beach, Florida 32018.  
Full Diver Service — Group or Private Classes  
Trips: Reef - Springs - Bahamas - Reef - Springs - Bahamas

**SEA DWELLERS DIVE CENTER**  
At Port Largo Airport  
Dive charters - Air - Rentals - Instruction  
P.O. Box 1796, Key Largo, Fla. 33037 Ph. 305/451-3640

**HALL'S DIVING CTR & RESORT** (305) 743-WISH or 743-5929  
1688 Overseas Hwy., Marathon, Florida Keys 33050  
Certified Instruction — Reef Trips — Rentals  
5000 psi air — Repair — 9 to 7 — 7 Days a Week

**PROFESSIONAL DIVING SCHOOLS OF FLORIDA, INC.**  
210 N. Federal Highway, Deerfield Beach, Florida  
1540 N. Federal Highway, Pompano Beach, Florida  
Reef trips & Bahamas. (305) 428-0560/785-0780

**PROFESSIONAL DIVING SCHOOLS OF FLORIDA, INC.**  
Bahia Mar Hotel & Yachting Center (AIA), Ft. Lauderdale, Fl.  
Complete Pro Dive Shop.  
Local reef trips, Keys, and Bahamas

**REEF RAIDERS DIVE SHOP** 305-294-0660  
U.S. Hwy #1, Stock Island, Key West, Fla. 305-294-3635  
Two Reef Trips Daily - Wreck and Night Diving  
Air-5000 PSI. Rntl and Sales on all diving equip.

**DIVING TRIP, INC., FT. LAUDERDALE**  
4565 SW 37 Avenue, Ft. Lauderdale, Florida 305/966-7775  
Dive Beautiful Coral Reefs and Wrecks  
Aboard the "SCUBA TOO" Captain Joe Schirck

**THE DIVE SHOP OF FORT LAUDERDALE** (on the beach)  
913 N. Atlantic Blvd., Ft. Lauderdale, Florida 33304  
Phone 305/565-6784 - Air Sales - Rentals  
Repairs-Hydrostatic Testing-Instruction-KEYS TRIPS & INFO.

**LAUDERDALE DIVER** Phone: (305) 46 SCUBA  
1334 S.E. 17th St., Fort Lauderdale "On the Causeway"  
On-site pool - complete master diver program. PADI 5 star  
Instruction-Sales-Service-Air-Photo-Trips. Widest Selection

**KEY WEST PRO DIVE SHOP, INC.** 305/296-3823  
1605 North Roosevelt Blvd., Key West, FL 33040  
Air, Sales, Repairs, Rentals, Instruction  
Daily Reef Trips - Charters to Dry Tortugas



SEA TRAIL MOTEL - REEF TRIPS (305) 852-8001  
Rt. 1, Box 91, Key Largo, FL 33037 - Mile Marker 99-98  
T.V., Air Cond., and Refrig. - Budget Rates  
Night/Wreck Dives - Snorkeling - Inst. - 6 Passenger

CAPT. BOB KLEIN'S HOLIDAY INN SCUBA SHOP  
Key Largo, Florida 33037 305-451-DIVE  
Guided Reef Trips/Cay Sal Blue Hole Dives  
Go First Class aboard the 50' "Plus Ultra"

UNDERWATER DESIGNERS COMPANY  
4591 St. Johns Ave., Jacksonville, Florida (384-3655)  
13637 Beach Blvd., Jacksonville, Florida (246-6729)  
Sales Representative - Rentals - Air - Instruction - PADI College

DOLPHIN DIVE CENTER  
US 1, Marker 103, Box 1936, Key Largo, Fla. 305/451-1381  
Complete dive center, PADI, group-club charters,  
Daily reef trips, spearfish, tropicals, photo

HARRY KEITZ'S AMERICAN DIVING HEADQUARTERS  
Rt. 1, Box 2748, Key Largo, FL 33037 (305) 451-0037  
Daily Dive Trips to Pennekamp Park, Group Rates,  
Motel Reservations, Photo Rentals, Complete Pro Store

ROCK REEF RESORT Phone 305-852-2401  
Box 73, Key Largo, Florida 33037  
5 minutes to Coral Reef State Park. Swimming, Skiing, etc.  
On water. Family units A/C, color TV.

ANGLER'S DIVE SHOP (305) 294-4248  
US 1, Stock IS., Key West, Fla. 33040  
Dive Boat Rentals, Family Reef Trips, Air, Rentals,  
Hydro. From the Island you can Drive to and Dive.

AQUA PEER, Divers Serving Divers, Since 1957.  
We rent Boats & Diving Equip., have Sales & Air & Instruct. Send  
\$1.00 for Map, Decal & Info to AQUA PEER, 267 N.W. 3rd St.,  
Crystal River, FL 32629 (904) 795-2776.

CUTLER RIDGE DIVING CENTER 251-2710  
20850 So. Dixie Hwy. (US 1), So. Miami, Florida  
Full PRO Shop Sales & Services  
Air - NAUI Instruction - Reef Trips

FRED & CINDY'S ATLANTIS MARINA (305) 664-4318  
Florida Keys, Box 708, Long Key, Florida 33001  
Boat Rentals to the Reef - Camping - Motels  
Air - Rentals - Trips - Complete Dive Service

DIVING SITE (305) 289-1021  
12565 Overseas Hwy., Marathon, Fla. 33050  
40' Dive Boat, Charters, Sales, Repair  
Photography, Hydro Test, PADI Air \$1.00

NEW ENGLAND DIVERS  
2945 NE 2nd Ave., Miami, Fla. 305-573-4600  
9820 S. Dixie Hwy., Kendall 305-667-4622  
Sales - Rental - Classes - Instruction

FRIENDSHIP INN — KEY LARGO near Pennekamp Park  
Box 456, Toll free except Florida: 800-327-8346  
Key Largo, Fla. 33037 (305) 451-1616  
Miami (305) 248-1644. Clubs & Groups.

BILL CRAWFORD'S TROPIC ISLE DIVE SHOP  
P.O. Box 755, Key Largo, FL 33037 (305) 451-1063  
Reef Trips — Photo & Scuba Rentals  
NIKONOS REPAIR CENTER

BUILD SCUBA TOW or SUB - "How-To" HANDBOOK \$10  
Plans: Tow \$8; Sub \$10 - Motors - Parts - FREE LIST  
SCUBA SCOOTERS & SUBS - Alum. Welding Kit \$10  
SEATECH, INC., 985 NW 95 St., Miami, FL 33150

Matheny's Aquatics Unlimited, INT'L TRAINING FACILITY  
YMCA-NASDS-NAUI-PADI. TRAVEL Host to FLORIDA SPRINGS  
& CARIBBEAN. Five minutes from JAX  
1472 Park Ave. (US 17), Orange Park, FL 32073 (904) 264-3357

OCEAN DIVERS INC. — Beautiful Pennekamp Park  
Reef Ecology Dive  
Group & Instructor Packages  
Box 1113-A, Key Largo, FL 33037 PH: 305/451-0286

DIVER'S WORLD (305) 655-3045  
601 So. Olive, West Palm Beach, FL 33401  
Wreck, Night & Reef diving - Lots of Fish  
Free Air and Dives - Treasure Hunts

DIVERS WORLD UNDERSEA CENTER 305/844-1510  
2525 Lake Drive, Riviera Beach, Florida 33404  
Daily Dive Trips, Full Rental, & Sales Shop, Accom.,  
Restaurant, Resort Course, 3 Boats, Spear Fishing.

SUNSHINE KEY AQUA CENTER 305/872-2400  
Rt. 1, Box 790-L, Sunshine Key, Fla. 33043  
Dive-fish-camp-trailers-rentals & 3500 air-reef  
trips on 65' & 24' boats to LOOE KEY/grp. rates.

DOLPHIN DIVE CENTER 24 Hour Hot Line  
3400 N. Overseas Hwy., Key Largo, FL 33037 305/451-1381  
Instruction—Daily Reef Trips—Discount Prices  
Ecology and Island Charters—Cottages and Dorms

HOLIDAY ISLE RESORT & DIVE CENTER  
Air Fills - Dive Trips - Rentals - Sales - Rental Boats  
..... Write for Free Map .....  
Box 482-A Islamorada, Florida 33036 305/664-4145

KEY LARGO DIVING HEADQUARTERS 24 Hour Hot Line  
Rt. 1, Box 293, Key Largo, FL 33037 305/451-1151  
Reef Trips—Air—Rentals—Dorms—Apartments  
Group Rates—Cay Sal, Bahama, and Tortuga trips

VORTEX SPRING & Scuba Shop (904) 863-4979  
Crystal Clear Diving-Ledge & Tunnel-Snorkel Run-Air-Rentals  
Full Hook-up Camping-Canoing-Equip. Rental - Rt. #2,  
Box 18 1/2 Hwy. 81 - 4 Mi. No. of Ponce deLeon - Fla. 32455

PORT PARADISE HOTEL, P.O. Box 516, Crystal River, FL. 32629  
904/795-3111 Motel Units, Effic., SCUBA INSTR. and Rentals  
Boat Rental, Docks, Diving Services, Swimming Pools,  
Restaurant & Lounge, Convention Facilities

SEAPRO SCUBA CENTER 305-844-DIVE  
3619 Broadway, Riviera Beach, FL 33404  
Scuba instruction, Vacation Resort Courses, Rentals,  
Air Station, Daily Gulfstream tropical reef trips.

JOHN PENNEKAMP PARK CONCESSION  
P.O. Box 13 - M  
Key Largo, Florida 33037  
Free Brochure, 25¢ for Reef Map (305) 451-1621

DIVERS' WORLD OF KEY LARGO 305/852-5498  
P.O. Box 1663, Key Largo, Fla. 33037  
On the Atlantic at Mandalay Marina - US 1 Marker 97.5  
Reef Trips - Air - Instruction - Sales - Rentals

KEY WESTER INN - LUSH TROPICAL RESORT - ON THE OCEAN  
Dive Shop w/daily reef trips, Tennis, Free Bikes, Free  
Island Tours, Pool, Sauna, Restr., Lounge & Disco - Low  
Rates-\$22 Daily. Key Wester Inn, Key West, Fla. 305/296-5671

GINNIE SPRINGS, INC. (904) 454-2202  
Rt. 1, Box 153, High Springs, Florida 32643  
Crystal Clear Springs, 72°, Scuba  
Canoe, Complete camping facilities

THE REEF SHOP DIVE CENTER & CHARTER SERVICE  
Rt. #1, Box 7 S.D.D., Islamorada (Fla. Keys) — Equipment  
Rentals-Sales-Repair-Air-Day/Night Reef Trips  
Dive Boats-Club, Group Packages-FSDA & PADI Instructions

NORINE ROUSE SCUBA CLUB of the PALM BEACHES  
4708 N. Dixie Highway 305/844-2466  
West Palm Beach, Florida 33407  
A membership club for divers only

SUNDIVERS STATION (305) 451-0676  
Rt. 3, Box 289-A, Key Largo, FL 33037  
Dive Pennekamp-Reef Trips-Photography  
Scientific Trips-Guides-Instr.-Motel Reservations

Jim Hollis' SCUBA WORLD 305/273-3373  
5107 E. Colonial Dr., (Across from Hwy. Patrol Station)  
Sales, Service, Rentals, Tours  
Classes - PADI, FSDA, YMCA

## GEORGIA

DIVING WORLD USA  
2945 Buford Hwy., Atl., Ga. 634-4354  
All Brands - Whol. & Retail - Repair - Rental  
YMCA, NAUI, PADI Classes 3 Man Chamber

BRIARLAKE DIVERS (404) 321-9539  
3561 LaVista Road, Decatur, Ga 30033  
Instruction — Sales  
Rental — Trips

## HAWAII

DAN'S DIVE SHOP, INC. 808-941-2284  
1382 Makaloe St., Honolulu, HI 96814  
Hawaii's Complete Sport Diving Center  
Novice - Pro/Charter, Rental, Air, Sales

CENTRAL PACIFIC DIVERS  
780 Front St. Lahaina, Maui, HI 96761 (808) 661-4661  
74-5484 Kaiwi St., Kailua Kona, HI 96740 (808) 329-3168  
Daily diving trips-6 islands, 5-day Scuba class

SKINDIVING HAWAII - MAUI  
1993 Kihei Rd., Kihei, HI 96753 (808/879-1558)  
5 day Cert. Course - Daily Dive Charters  
"Hawaii's Oldest & Largest"

GOLD COAST DIVERS - KONA (808) 329-1328  
formerly Skindiving Hawaii - Kona  
Box 2064, Kailua-Kona, HI 96740  
Daily Charters, 5-day cert., Rental, Air Sales

SOUTH SEAS AQUATICS Ph: 538-3854, 538-3855  
1125 ALA MOANA BLVD.  
HONOLULU, HAWAII 96814  
Sales — Rentals — Air-Charter Inst. Free Brochure

HAWAIIAN DIVERS 808-329-3407  
Box 572, Kailua Kona, HI 96740  
Charters, Sales, Rentals, Instruction  
"The Experts In Kona"

DIVIN' HAWAII CORP. (808) 833-2298  
5085 Likini St. Honolulu, HI 96818  
SCUBA & SNORKEL TOURS TWICE DAILY/NAUI & PADI Instr.  
U/W Photography, Free Transport, Beginners Welcome

GARDEN ISLAND MARINE Na'awili Harbor  
RR Box 1808, Lihue, Kauai 96766 808-245-6361  
Fantastic Diving, NAUI/PADI, SCUBA Charters  
Lessons, Sportfishing, Skiing, Pkg. Tours, Maps

ALOHA DIVE SHOP 395-5922  
Koko Marina - Honolulu, HI. 96825  
"GATEWAY TO HANAUMA BAY"  
Scuba Instruction - Charters - Sales - Rentals - Air

AARON'S DIVE SHOP, INC. (808) 261-1211  
39 Malunui Ave. Kailua, Oahu, Hawaii 96734  
Rentals, Sales, Air, Inst. Hydros, Repairs  
Scuba Dives on Farallon Sea-Scooters

AMERICAN DIVE HAWAII (808) 923-5382  
P.O. Box 88161 Honolulu, HI. 96815  
SCUBA & SNORKEL TOURS DAILY/5 DAY CERT.  
U/W Photo, Hotel Pickup, Air, Sales, Rental

HAWAIIAN-PACIFIC DIVERS 244-5910  
10 Market St., Wailuku, Maui, Hawaii 96793  
Wailea/Kihei - Cat & Glassbottom Charters  
Scuba & Snorkel, NAUI Instr., Sales, Rentals, Air

OCEAN ADVENTURES (808) 235-5055  
46-216 kahuhipa st., kaneohe, hi. 96744  
TOURS DAILY/INSTRUCTION/SALES/RENTALS/PHOTO/AIR  
complete underwater specialists

AQUATICS KAUAI, Ltd. "Underwater Educators"  
4442 Makaha Rd., Kapaa, Kauai, HI 96746 808/822-9213  
Underwater photography, Advanced scuba ratings.  
SNORKEL-SCUBA DIVE TOURS.

KONA VILLAGE RESORT 808/329-2275  
The KONA COAST'S exclusive hideaway.  
Luxurious private beach bungalows. Full American Plan.  
P.O. Box 1299, KAILUA-KONA, HI 96740

DIVE KONA AT KONA VILLAGE RESORT 808/329-2275  
COMPLETE DIVE SERVICE. Write for brochures.  
Send \$7.50 for "DIVE KONA" T-shirt, Size?  
P.O. Box 3005, KAILUA-KONA, HI 96740

MAUI DIVE SHOP (808) 877-7704  
Maui Mall - Kahului, HI 96732  
Hotel & Classroom facilities on the Beach in Kihei  
5 day Sport Scuba Class, Sales, Air, Rentals, Charters

BLUE WATER DIVERS (808) 661-8621  
Whaler's Market Place, Lahaina, Maui, HI 96761  
Daily Charters, Rental & Retail Eqmpt., Nite Dives, Instru.-  
Novice-Experienced. "Individualized Diving"

DIVE MAKAI charters - KONA'S BEST - 808/329-2025  
Tom Shockley (formerly with the OLD Hawaiian Divers)  
P.O. Box 2955, Kailua - Kona, HI. 96740  
SMALL, PERSONAL charters. YOU are boss! Write.

## ILLINOIS

AQUA CENTER 43 E. Downer, Aurora 896-3596  
AQUAVENTURE 1655 Oakton, Des Plaines 297-7414  
AQUAVENTURE Rowing & Euclid, Arl. Hts. 398-5139  
Instruction-NASDS-Air-Rentals-Tours-Services

WATER SHED DIVE SHOP  
1028 E. Walnut, Carbondale, Ill. 62901  
Sales - Rental - Air - Repair - Recovery  
NAUI & YMCA Instructions

THE OUTDOOR STORE (618) 277-5151  
2224 W. Main Street, Belleville, Ill. 62221  
Sales - Rental - Air - Instr. PADI  
U/W Cameras, Housings

SILENT SEAS MARINE, INC.  
841 S. River, Aurora, IL 60506 (312) 859-8080  
AIR-SALES-RENTALS-SERVICE-INSTRUCTION  
YMCA - PADI CERT. - OPEN MON THRU SAT

ELMER'S WATERSPORTS, INC.  
2508 Gross Point Rd., Evanston, IL 866-8775  
Equipment Sales - Services - Rentals - Air  
Tours - Certified Instruction

DIVE & SKI 425-0822  
2958 W. 95th St., Evergreen Park, Ill. 60642  
Air, Instruction, Rentals, Repairs  
Top Lines in EQUIPMENT

AQUA SHOP, INC.  
319 North St., Normal, IL 61761 (309) 452-7409  
Located on the second floor of The Alamo II  
Sales, Service and Rentals. Air to 3000 lbs.

BERRY SCUBA  
6059 W. Addison, Chicago. (312) 725-2032  
12003 S. Cicero, Alsip. (312) 371-3366  
Air - Rentals - Repairs - Instruction

ANCHOR IN SCUBA CENTERS  
315 W. Ogden Ave., Westmont (312) 971-1060  
6932 W. 16th St., Berwyn (312) 484-1018  
UN/H2O Camera Shop - Instructions - Rentals - Tours

BLUE HOLE, INC. (309) 676-1852  
4817 West Farmington Road, Peoria, Ill. 61604  
INSTRUCTION - Sales - Service - Rentals - TOURS  
Open M-W-F 4-8 p.m. - Saturday 9 a.m.-5 p.m.

INTERNATIONAL SCUBA CENTER  
2 North Elmhurst Road, Prospect Heights 255-0155  
9450 South Roberts Road, Hickory Hills 599-4441  
3919 Oakton Street, Skokie 674-0222



MIDWEST DIVING SPECIALISTS, INC.  
203 S. Linden, Normal, IL 61761 (309) 452-0222  
PADI Training Facility S-620  
Air, Sales, Service, Rentals

ANGLERS CHARTER SERVICE  
P.O. Box 195, Palos Park, ILL 60464 425-2640  
Wreck Diving - Lake Michigan Wrecks  
Guided Dives - Rentals

ACE DIVE SHOP 312/832-8100  
126 S. Villa, Villa Park, IL  
Sales - U/W Tours Salvage Open 7 Days  
Air, Repairs, Hydro. Vip, Tumbling Instruction

## INDIANA

SCHOLL'S PRO DIVE SHOP  
U.S. Hwy. 12, by 2nd St. Bridge, Mich. City, Ind. 46360  
3000 P.S.I. Fills, Charters, Rentals, Repairs, Hydro.  
Sales, PADI & NASDS Instruction.

## KANSAS

THE DIVE SHOP, INC. K.C. area 913/381-4400  
3606 W. 95th St., Leawood, Ks 66206  
Sales 7 days, YMCA, PADI, NAUI. Local & ocean trips.  
Photography, Repairs, Air, Rentals, Commercial.

## LOUISIANA

TEMENTO'S, INC.  
435 Sala Avenue, Westwego, La. 70094  
(504) 340-7636  
FOR ALL YOUR DIVING NEEDS

ADVENTURE SPORTS - 1817 Texas Ave. (318) 425-5870  
Shreveport, LA 71103 NAUI-YMCA-PADI Instr.  
Home of ARK-LA-TEX Diving School Inc & U/W Swim  
Assoc. Sales-Repairs-Rentals-Air-Trips

SELL•QUALITY•DIVE/AGA COMMERCIAL/SCUBA EQMPT.  
"LEAD the way to safer diving" •GO FIRST CLASS• DEALERS  
are #1 CALL 504/368-2986 TODAY!! or write: P.O. Box 504,  
Harvey, La. 70059 Cable: DIVEX USA Telex: 58 7428

ADVENTURE SPORTS — 1817 Texas Ave. (318) 425-5870  
Shreveport, LA 71103 NAUI-YMCA-PADI Instr.  
Home of ARK-LA-TEX Diving School, Inc. & U/W Swim  
Assoc. Sales - Repairs - Rentals - Air - Trips

## MAINE

CONGRESS HARDWARE & PAINT CO. (TOMMY'S)  
273 Congress Street, Portland, Me. 772-5357  
Complete Line of Skin Diving Equipment - Sales  
Service - Rentals - Hydrotest - Air Station

NORTHEAST DIVERS Phone: (207) 989-4330  
163 North Main St., Brewer, Maine 04412  
OPEN ALL YEAR 6 DAYS 9am-5pm. COMPLETE LINE of  
SKIN & SCUBA EQUIP. -SLS-SVS-RNTLS-AIR-mail order.

AQUA SPORTS  
999 Congress St., Portland, Me. (207) 772-4200  
Skin & Scuba Sales, Service, Air Station,  
Rentals, Instruction, NASDS, PADI

## MARYLAND

DIVERS DEN, INC. Tel: 668-6866  
8105 Harford Rd., Baltimore, Md. 21234  
Sales - Service - Air - Rentals - Boat Trips -  
Instr. - Custom Suits - Tours - Metal Detectors

DIVERS WORLD  
923 Gist Ave., Silver Spring, Md. 589-7564  
SALES-AIR-RENTALS & B.S.  
Wreck Diving Trips Every Weekend

THE SCUBA HUT, INC. 301-761-4520  
418 Crain Hwy., S.W. Glen Burnie, Md. 21061  
Maryland's Full Service  
Pro Dive Store

PARKS DIVING SUPPLY Tel. 301/655-8744  
Wholesale & Retail Commercial & Sport Diving Equipment  
SALES-SERVICE-RENTALS-LESSONS-CHARTERS-AIR-  
MIXED GAS - 8027 Liberty Road, Baltimore, MD 21207

PORTHOLE DIVE SHOP, INC. (301) 363-3388  
Pro-Dive Shop "Sales, Service, Air Fills,  
Rentals, In-House Hydrostatic Testing,  
Charter Trips & Certified Instruction

## MASSACHUSETTS

SHIP MATE DIVE SHOP 617-385-8782  
Sesuit Harbor, E. Dennis, Mass. 02641  
Sales - Rentals - Repairs - Air - PADI - YMCA  
Beach & Boat Dives in Cape Cod Bay

NEW ENGLAND DIVERS, INC. — HEADQUARTERS  
Tozer Rd., Beverly, Mass. (617) 922-6951  
Mon.-Sat. (8:30 am-9 pm), Sun. (8:30 am-6 pm)  
Olympic Size Indoor Pool for Instruction.

EASTERN DIVERS SUPPLY, INC. 617/453-7574  
190 Middlesex St., Lowell, Mass.  
Instruction — Rentals — Hydros  
Local diving tours.

FRED CALHOUN'S U/W SAFARIS 617-283-4933  
NAUI Adv. Scuba Training - Bahama Dive Tours  
Mass. N. Shore boat-based dive trips - Lectures  
Box 291, Back Bay Annex, Boston, Mass. 02117

INLAND DIVERS (617) 892-3323  
100 So. Main St., Leicester, Mass.  
Mon-Sat 9-9, Sun 9-5, Sales, Rentals, Repairs,  
Air, Hydros, Instr., NAUI, Indoor Heated Pool

EAST COAST DIVERS, INC. 617/277-2216  
213 Boylston St. (Rte. 9), Brookline, Mass. 02146  
Full Service for your diving needs  
Sales, Rentals, Repairs, Lessons, Air, and more.

HYANNIS SCUBA CENTER (617) 771-6260  
303 Iyanough Rd., Hyannis, Ma. 02601  
Sales, Rentals, Service, Instruction  
And more

MARINE CONTRACTING SCUBA SHOP, INC. 617-251-4895  
193 Princeton St., No. Chelmsford, Mass. 01863  
Sales, Rentals, Repairs, Air, Lessons CO-ED  
NASI, NAUI, YMCA.

SOUTH SHORE SKINDIVERS, INC.  
511 Washington St., Quincy, Mass 02169  
617/471-9800 - 617/773-5452 — Hydrotests  
Air Fills, Scuba Classes, Rep's Trips

DUKE & RAY SPORTS CENTER, INC. 617/846-7366  
60 Woodside Ave., Winthrop, Mass. 02152  
Open 7 days. Sales, Air, Complete Service,  
Rentals, All Sports

NORTHEAST SCUBA, INC. (617) 774-7296  
125 Liberty St., Danvers, Ma. 01923  
Sales, Air, Rentals, NAUI Instr.  
Repairs, Hydros, 3 Day Service, 1 Wk. M.O.

## MICHIGAN

SCUBA NORTH, INC. (616) 947-2520  
13258 West Bayshore Drive, Traverse City, MI 49684  
NAUI-PADI, Retail-Wholesale, Repairs, Hydro test, Lessons,  
Charters, Rentals, Sailboats, Windsurfing, Compressors.

HIGGINS LAKE SPORTS CTR. 517/821-9241  
9982 W. Higgins Lake Dr., Higgins Lake  
Mich. 48627 Equipment - Rentals -  
3000 PSI Air Station - Instr. - OPEN ALL YEAR

WOLF'S ENTERPRISES Tel. 983-1008  
1207 Ann Street, St. Joseph, Mich.  
Wholesale, Retail, Air, Rental  
Your Marine and Water Sports Hdqts.

RECREATIONAL DIVING SYSTEMS  
4501 N. Woodward, Royal Oak, MI 313-549-0303  
3380 Washtenaw, Ann Arbor, MI 313-971-7771  
U/W Photo - Carb Tours - Wreck Dives - Scubapro

SEAQUATICS, INC. 28 Ashman Circle  
Midland, MI. 48640 (517) 835-6391  
Sales - Rentals - Air - Repairs - Hydro - Wreck  
Diving Trips — Instruction: NAUI, PADI, YMCA

RECREATIONAL DIVING SYSTEMS 313/549-0303  
4501 N. Woodward, Royal Oak, MI. 48072  
Scubapro equipment • U/W Photo • Wreck Dives  
Caribbean Tours. Bonaire - Roatan - Cozumel - Cayman

## MISSOURI

JOHN THE DIVER, INC. SCHOOLS OF DIVING  
S.R.I., Box 459, Branson, Mo. 65616 417-338-2224  
2555 So. Campbell, Springfield, Mo. 417-887-0606  
110 E. 25th St., Joplin, Mo. 64801 417-624-4511

DIVER'S VILLAGE, INC. (314) 365-3242  
Box 329, Lake Rd. W-20, Lake Ozark, MO 65049  
Year 'Round Instruction - SSI - Indoor Pool  
Full Service Pro Shop - Rentals, Air, Sales, Salvage, Trips

WEST END DIVING CENTERS, INC. 314-822-3005  
11004 Manchester, St. Louis, Mo. 314-731-5003  
11215 Nat. Bridge Road  
Retail, Whsle, Repairs, Comprs, Rental, Instr., Air 5000

THE DIVE SHOP, INC. 314/968-8099  
9832 Manchester Rd., St. Louis, MO 63119  
"Full Service PROFESSIONAL Dive Shop."  
PADI, Air, Trips, Rental, Service, Sales, Hydro.

DIVERS EQUIPMENT & REPAIR SERVICE, INC.  
5800 Barrymore Dr., KC, MO. 64134  
SALES (Large Stock) Hydro-Air-Repair-Trips.  
NASDS INSTRUCTION — INDOOR HEATED POOL

## NEW HAMPSHIRE

LAPORTE'S SKINDIVING SHOP, LAKE SUNAPEE, N.H.  
Route 103, Box 53, Newbury, N.H. (603) 763-5353  
Sales, Service, Rentals, Air, Salvage  
5 Star PADI Store — Certified Instruction

DIVER'S DEN of N.H. 603/627-2536  
730 Mammoth Road, MANCHESTER, N.H.  
RENTALS-SALES & SERVICE-AIR-BOAT  
DIVES-INSTRUCTION GROUP or PRIVATE

UNDERWATER SPORTS OF N.H. (603) 357-4430  
334 Park Avenue, Keene, N.H.  
Lessons - Sales - Service - Rentals - Air  
Hydro - Trips - Salvage - Commercial Work

## NEW JERSEY

THE DIVER'S DEN (201) 752-6050  
232 Route 22, Green Brook, New Jersey  
N.A.U.I. Certified Instruction  
Sales, Service, Rental, Air, Wreck Trips

INNERSPACE DIVERS OF LONG BEACH ISLAND  
2805 Blvd. Beach Haven Gardens, N.J. 609-492-0982  
Sales-Service-NAUI Instr.-Air (5000 PSI)  
Rentals-Repairs-Trips-OPEN ALL YEAR

DIVER'S COVE YMCA, NAUI, PADI Inst.  
Hwy. 35, Laurence Harbor, New Jersey 201/583-2717  
AIR SALES SERVICE RENTALS  
Diving Vacations, Single or Group - Open Water Training

Cedar Grove Divers Supply (201) 857-1748  
Nat/Cert. Instr. — Private or grp. lessons —  
Indoor heated pool — Full service dive shop  
492 Pompton Ave., (Rt. 23), Cedar Grove, NJ 07009

MARLIN SCUBA  
506 Rt. 17, Ramsey, N.J. 07446 (201) 327-6000  
Equipment - Repairs - Air Station - Instruction  
Indoor Pool - PADI - YMCA - NAUI - British Sub Aqua

LAKELAND DIVERS, Inc. (201) 887-0194  
92 Rt. 10, East Hanover, N.J. — YMCA, NAUI, PADI  
"The Full Service Dive Shop"  
Indoor Heated Pool on Premises

PRINCETON AQUA SPORTS (609) 924-4240  
306 Alexander Street, Princeton, N.J. 08540  
YMCA, NAUI, PADI Instruc. - Sales - Rentals - Air  
Service - Hydros - Charter Boats, Trips.

MANNY & MARY'S SPORT SHOP (201) 787-0508  
Rt.-36, E. Keansburg, N.J. 07734  
Air — Rentals — Repairs —  
Instruction — Full Service

## NEW YORK

RICHARDS AQUALUNG CENTER Times Square  
233 W. 42nd St., Manhattan 10036. 212-947-5018  
Largest Pro Dive Shop — All Latest Gear  
Quantity Prices - Service - Courses, Basic & Adv.

WORLD WIDE DIVERS, INC. (212) 688-2510  
155 East 55th Street, New York, N.Y. 10022  
Sales - Repairs - Rentals - Air - Tours - Instruction  
Manhattan's only exclusive dive shop.

THE DIVE SHOP, INC. Open 7 Days  
110 W. Main St., Bay Shore, N.Y. (516) 665-2526  
68' Dive Vessel, Indoor Pool, Rentals  
NAUI-PADI-YMCA Instruction, Repairs, Hydros, Air \$1

BAY/SCUBA SPORTS (212) 748-6848  
10004-4th Ave., Brooklyn, N.Y. 11209  
Lowest Prices, Instruction, Wrecks  
Refills, Sales, Rentals, Hydro.

HARVEY'S MT. SHEEPSHEAD DIV. CTR. (212) 743-0054  
3179 Emmons Ave., Brooklyn, N.Y. Sheephead  
Bay-Instant Refills-5000 PSI-Custom Suits  
Instr. - Low Prices - Hydrotesting - Wrecks.

CENTRAL SKINDIVERS Open 7 Days  
2608 Merrick Rd., Bellmore, N.Y. (516) 826-8888  
160-09 Jamaica Ave., Jamaica, NY (212) 739-5772  
Rentals — Heated Indoor Pool — 59 Ft. Wreckboat — Air \$1.00

BROOKLYN DIVERS' SCHOOL & SUPPLY  
2917 Ave. I, New York City's oldest exclusively  
dive shop. Full Service. Instruction. Wholesale - Discount Retail  
Open 7 Days (212) 377-9461

KINGS COUNTY DIVERS CORP.  
Brooklyn's Full Service Pro Shop  
Authorized Scubapro Dealer  
3040 Ave. U 212/648-4232



7 Z's - Home of Hampton Bay Divers, Inc.  
1140 Flanders Road 516/727-2642  
Flanders, L.I., N.Y. 11901  
Complete SCUBA Facilities (1/4m E/O Big Duck)

EAST COAST DIVING, INC. (212) 979-6056  
1724 Hyland Blvd., Staten Island, N.Y. 10305  
Air, Sales, Service & Rentals  
40' Charter Vessel "Kiwi"

NIAGARA SCUBA SPORTS 6 Days, 4 Evenings  
2048 Niagara St., Buffalo, N.Y. 716/875-6529  
PADI, SSI, YMCA, Basic, Adv., Specialty Course, SIs, Rntls  
Cert. Pure Air, Tank Tstng., Rprs., Tours, Local Dive Trips, Salvage

PROFESSIONAL DIVE TRIPS, INC. (212) 332-9574  
Capt. Bill Reddan - 3662 Shore Pkwy, Brooklyn, NY  
Aboard 40' M/V "Terry." USCG Lic., Full Equipment  
Wrecks, Lobster, Nite Dives, Adv. Courses YMCA/PADI

DANNY'S DIVE SHOP (516) 223-8989  
1579 Grand Ave., Baldwin, N.Y. 11510  
Dan Capalbo welcomes old friends and new divers.  
Sales, Service, Rentals, Air, NAUI/PADI Instr.

NYPENN DIVERS & SPORTS SUPPLY, INC.  
400 Prospect St. Exit 71 off Rt. 17  
Binghamton, NY 607-729-4988  
Sales-Service-Rentals-Trips-Instruction

ISLAND DIVE SHOP, INC.  
Rentals-Repairs-Air-Wreck Dives-Instruction-Hydro  
329 So. Grove Street, Freeport, NY 516/546-2030  
24 Clinton Ave., Huntington, NY 516/421-5151

NORTH SHORE DIVING CENTER (516) 757-2252  
58 Larkfield Rd., E. Northport, NY. NASDS, NAUI,  
Basic & Adv. Inst., U/W Photo courses, Sales,  
Repairs, Air, Rentals, Charters, Hydros, Travel

MARSHALL'S PRO DIVING SERVICE (607) 387-7321  
Heart of the Finger Lakes (near Ithaca)  
Frontenac Road, Trumansburg, N.Y.  
Cert. Inst. - Sales - Service - Rentals - Air

SCUBAPLUS (212) 689-0035  
201 E. 34th Street, New York, N.Y. 10016  
One place for . . . Scuba information, Instruction,  
Equipment/Buy & Rent, Repairs, Travel, PLUS

WESTCHESTER DIVE CENTER & SCHOOL (914) 937-2685  
62-66 Westchester Ave., Port Chester, N.Y.  
SALES-AIR-RENTALS-CUSTOM SUITS-SERVICE  
PADI Training facility — CALL FOR MAILER

NATIONAL AQUATIC SERVICE, INC. (315) 479-5544  
1425 Erie Blvd. East, Syracuse, New York 13210  
NASDS Instruction - Sales - Service - Rentals - Tours  
Open 9 to 5 Daily.

## NORTH CAROLINA

DIVE THE GRAVEYARD ABOARD PARAGON II (919) 353-0412  
32', Fully Eqpt., Fast & Comfortable, Cert. Capt. & Diver  
THE SCUBA CENTER, Inner Space Specialists, Full Sales &  
Serv. NAUI, PADI 1909 Lejeune Blvd., Jacksonville, N.C.

## OHIO

BUCKEYE DIVING SCHOOLS (216) 439-3677  
46 Warr. Center Rd., Bedford, OH  
Lg. Stock of Major Brands, Repairs, Rentals, Trips to  
San Salvador, Belize, Lake Erie. Call for Schedule.

SUB-AQUATICS, INC. (614) 864-1235  
8855 E. Broad St., Columbus, Ohio  
Retail/Wholesale, All Major Brands: Mako Com-  
pressors, Lubell Speakers, Tank Cleaner Tools, Helle

SUB-AQUATICS, INC. 216-467-5575  
10333 Northfield Rd., Northfield/Cleveland, OH 43068  
Sales, Service, Air, Rentals, Good Prices!  
Ohio's Largest Equipment Wholesaler

AQUANETIC CENTER (419) 592-9876  
203 Brownell St., Napoleon, Ohio 43545  
Inst. YMCA, PADI, Air to 3000 psi, Rentals, Trips  
"Pointing the Way . . . . . To Better Diving"

AQUA HUT INTERNATIONAL  
1011 So. Main, Bowling Green, Ohio 352-5128  
Retail, Wholesale, Complete Rentals, Repairs  
PADI Training Facility - Trips - Air \$1.00

PENNINGTON RUBBER COMPANY (513) 641-0211  
4676 Paddock Road, Cincinnati, Ohio 45229  
U.S. Divers Distributor  
Large Inventory — Wholesale & Retail

## OKLAHOMA

DIVE SHOP — 1111 S. Commerce, Ardmore. 223-1032  
Air-Sales-Rentals-Custom suits-Scubapro 223-2034  
Open Sun. April 1 thru Oct. 1. Cozumel-Bahama Trips.  
Large EQ Stock. A Complete Pro Shop. NASDS.

## OREGON

NORTHWEST DIVERS SUPPLY, INC. (503-267-3723)  
825 S. Broadway, Coos Bay, Or. 97420  
Sales, Rentals, Air, Hydrotesting, Gold Dredging  
Equip. NASDS Instruction, Trips.

## PENNSYLVANIA

CEDAR RUN POOL & SCUBA SHOP  
Camp Hill, Pa. 17011. (717) 737-8552/766-6181  
Scuba Sales and Instruction  
Bill & Betty Whitlock

SMOKEY'S DIVER'S DEN 717-393-5333  
412 N. Duke St., Lancaster, Pa. 17602  
Air-Cert. Instr.-Rentals-Sales-Service-Recov. U/W  
Tours. Lecture-Slides-Movies for Schools - Clubs

DIVING BELL, INC. 215/PO3-6866  
681 N. Broad St., Philadelphia, Pa. 19123  
Doug Gawthrop, Manager - Closed SUN & MON  
Free Parking on both PRUYN ("Prine") lots

SUB-AQUATICS (412) 531-5577  
1593 Banksville Rd., Pittsburgh, Pa.  
Factory Auth. Services. Tank Hydro & Clean  
Rentals, Air, All Brands, NAUI, YMCA, PADI

GILLIGAN'S ISLE, INC. (215) 289-6792  
6545 Roosevelt Blvd., Philadelphia, PA  
Instruction, Gear, Air, Repair, Dive Trips  
Noon to 8 p.m. daily, 10 to 5 p.m. Saturday

TEACH/TOUR DIVING COMPANY (215) 759-6950  
138-C Beil Ave., Nazareth, PA 18064  
Nat. Hdq. Jamaica & TXOBAGO Diving Tours  
P.A.D.I. ITC Headquarter: 9-5 daily.

DON COOK'S SCUBA EQUIPMENT (717) 326-2091  
940 Market St., Williamsport, Pa. Closed Wed.  
Air - Cert. Inst. PADI - Sales & Service  
Pro Dive Shop

PROFESSIONAL DIVING SERVICES CO. 274-7719  
726 Pittsburgh St., Springdale, Pa.  
Basic, Advanced Scuba by Dick Geyer (Navy div.)  
Equip., Sales & Service, Air, Lectures, Movies

YORK SKIN DIVERS' SUPPLY, INC. (717) 854-3133  
1505 S. George St., York, Penna.  
Instructions - Sales - Rentals - Air  
Service - Commercial Diving/Communications

T.C.'S DIVE SHOP (215) 628-4935  
318 E. Butler Pike, Ambler, Pa. 19002  
Sales - Rentals - Dive Trips -  
Repairs - Air Fills - Instruction

## RHODE ISLAND

VIKING DIVE SHOP Tel. 847-4179  
111 Bellevue Ave., Newport, R.I.  
Air, Rentals, Repairs, Sales, Hydrostats  
Wet Suits Tailored - NASDS Instruction

DIVER'S WORLD OF R.I.  
754 Main St., E. Greenwich, R.I. 401/884-5141  
2060 Smith St., Centerdale, R.I. 401/231-2212  
Cert. Instr. Hydros-Air-Unisuits-Poseidon

RHODE ISLAND DIVER'S SUPPLY (401) 274-4482  
209 Elmwood Avenue, Providence, R.I.  
Air, Rentals, Repairs, Sales, Hydrostats  
NASDS Instruction, Indoor Heated Pool

## SOUTH CAROLINA

NEPTUNE DIVE & SKI (803) 279-2797  
133 Georgia Ave., N. Augusta, S.C. 29841  
Sales - Rentals - Air - Hydrostatic - Tours  
Professional Instruction — NASDS

## TENNESSEE

DIVE SHOP INSTR.-NASDS  
3149 Popular, Memphis, Tenn. 38111  
SALES - RENTAL - AIR - REPAIRS - TOURS  
(901) 324-0267 or 324-2686

## TEXAS

UNDERWATER SPORTS AND EQUIPMENT COMPANY  
10634 Ferguson Road, Dallas, Texas 270-9640  
Air - Hydrotesting - Supplies - Instruction  
Open six days a week 'til 9:00 P.M. Closed Wed.

DIVER'S WORLD, INC. (No. Dallas)  
632 S. Central Expwy., Richardson, TX 231-7865  
Major Brands, Sales, Air, Rentals, Repairs, Hydro-World-  
Wide Trips, NAUI Instr. Nikonos, Zodiac Inflatable Boat

PADRE ISLAND DIVE SHOP  
4455 So. Padre Island Dr. 512-855-2821  
Corpus Christi, Tx. 78411 PADI, YMCA  
Trips to Oil Rigs & Liberty Ships, Rentals, Sales, Air

ARLINGTON SCUBA CENTER, INC. (817) 265-6712  
2414 W. Park Row Dr., Arlington, Texas 76013  
PADI Instruction, Air, Sales, Rental, Repair  
Most Complete Pro Service in North Texas

LA-MAR CORBET DIVE SHOPS  
Grand & I-H-10, Beaumont, Tex. 713/833-2878  
NIGHT: 713/769-5560  
"If you need it for diving, we have it" 24-hr.

BLUE WATER DIVING SCHOOL (SSI)  
910 Westheimer, Houston, TX 77006 713/528-0634  
Downtown Location - Scubapro - Gulf Dives  
Group Cozumel Trips - Se Habla Espanol. Photo Equip.

## VERMONT

NORTHERN DIVERS INC. (802) 862-3881 (B)  
100 Main St., Burlington, VT  
NAUI Instruction, Sales, Rentals, Repairs, Commercial  
5000PSI Air, "A Professional Dive Shop"

VICTORY AUTO STORES 802/862-0963  
145 Cherry Street, Burlington, VT 05401  
Air - Reg. & Valve Repairs - Hydros Wholesale & Retail  
H.P. Air Compressors - New-Used-Rebuilt

## VIRGINIA

AQUA-LUNG DIVING CENTER, INC.  
805 W. Little Creek Rd., Norfolk, VA 804/423-0537  
9601 Jefferson Ave., Newport News, VA 804/596-1914  
Sales-Rentals-Repairs-Hydro-Air-Instruction

SKI & DIVE SHOP (703) 683-2220  
1545 N. Quaker Lane, Alexandria, VA 22302  
Full Service professional dive shop. INSTRUCTION-SALES  
REPAIRS-AIR-TRAVEL. Authorized Scuba-Pro dealer.

BLUE RIDGE DIVE SHOP 804-293-6984  
1726 Allied St., Charlottesville, Va. 22901  
Sales, Service, Air, Rentals, Hydro, Instr.  
Comm. Diving, Pkg. Deals, Rock-Shell Shop

## WASHINGTON

NEW ENGLAND DIVERS, INC.  
11009 First Ave., So. Seattle, Wa. CH 6-8156  
Hwy. 99 & 252 So., Kent, Wa. CH 6-DEEP  
Sales - Air - Classes - Rentals

## WISCONSIN

ON THE ROCKS - Scuba Headquarters  
Lodging-Rentals-Charter Vessel-  
Oil Free Air-Guided Dives (414) 854-2808  
Route 1 - Box 164 - Ellison Bay, WI 54210

INLAND SEAS DIVING ACADEMY, INC.  
310 North Commercial Street  
Neenah, Wisconsin 54956 Tel.: (414) 722-0051  
Air, Equipment, Instruction, Rentals

FONTANA ARMY-NAVY STORE, INC.  
Hwy 67, Fontana, Wis. (414) 275-2220  
251 State St., Madison, Wis. 608-257-5043  
Air - Instructions - Equipment - Rentals

3 LITTLE DEVILS SCUBA DIVE SHOP  
Rt. 4, Hwy. 123, Baraboo, Wis. (608) 356-5866  
North Ent. to Devil's Lake State Park  
Sales - Lessons - Air - Rental - Great Diving!

## AUSTRALIA

CAIRNS BARRIER REEF DIVERS. Extensive Trips  
to the Great Barrier Reef on the "Osprey" - Rentals  
NAUI Inst. - Further info 47 Shields St., Cairn  
Old., Aust. 4780. cables: "OSPCARTERS" Cairns

Barrier Reef Dive Cruises with PETER TIBBS  
2-20 days 5-20 people. FAUI-CMAS instructor  
sales, service, hire equipment, guides.  
P.O. Box 1321, CAIRNS QLD 4870 AUSTRALIA Ph. 512604

## BAHAMAS



CAT ISLAND/BAHAMAS (516) 265-5502  
Small grp. pkg. dive or fishing trips; incl. ocean front home, boat, Capt., air tanks, virgin reef, drop off.  
Contact: Pat Kosse, Tracklot Rd., St. James, NY 11780

UNDERWATER EXPLORERS SOCIETY (UNEXSO)  
Box F-2433, Freeport, Bahamas (809) 373-1244  
Famous facility - Reef Trips - NAUI Courses  
Group Rates - 18' Deep Tank - Chamber - Air

WALKER'S CAY, Abacos 305-522-1469/800-327-1791  
Diving adventures day & night, many reefs, NAUI.  
Excel. accommodations, individual & group packages.  
Write: 700 S.W. 34th St., Ft. Lauderdale, Fla. 33315

BIMINI UNDERSEA ADVENTURES 305/763-2188  
Specialize Complete Wholesale Group  
Packages - Dive Shops - Clubs  
Write: P.O. Box 4960, Ft. Lauderdale, Fla. 33338

FREEPORT-Oceanview Apts., \$35/Day, \$210/Wk. for 5 Rm.-  
2 bath Apt. Incl. Air Tanks. Near dive clubs & resort area. Fully  
equipped kitch., linens, T.V., pool. (305) 574-2604  
Brochures: E. Duerksen, 1725 Haverhill, Deltona, FL 32725

SAN SALVADOR ISLAND—Spac. new 2 br./2 bath stone hse.  
beaut. furn. sleeps 6 on solitary beach. P/u truck incl. Top scuba  
facil. plus all island recreation. Dick Hitchcock, c/o  
P.O. Box 14394, Ft. Lauderdale, FL 33302

HARBOUR ISLAND, VALENTINE'S YACHT CLUB AND INN  
Box 1, Harbour Island, Bahamas. For Resvns.—809/333-2142  
or Bahamas Reservations Service 800/327-0787  
in Florida 800/432-5595, in Canada ZEnith 99110

## BARBADOS

WILLIE'S WATER SPORTS Tel. 02836 or 62273  
Paradise Beach Hotel, Barbados, W.I.  
Dive Grps.-Individual or Lessons. Full Scuba, Skin Diving  
and Water Sport Facilities. Accommodations arranged.

SCUBA SAFARI BARBADOS Phone 60621 or 60054  
Hilton Drive, St. Michael, Bridgetown, Barbados  
Complete Scuba Diving Services. Cert. Guides, Sales  
Rentals, Instruct. Diving Pkg. from Canada & USA

## BELIZE

AMBERGRIS LODGE Barrier Reef Diving  
Beachfront island hotel. Full facilities for  
Groups/Individuals. 36' dive boat.  
Box 428, Navesink, N.J. (201) 291-4974

ST. GEORGE'S LODGE — Varied Reef Diving  
Diver designed private island resort  
Comfortable accommodations. Good Food  
DTI, 1036 N. Bundy, L.A., Ca. 90049 (213) 472-0940

## BERMUDA

DAVE McLEOD'S SKINDIVING ADVENTURES  
The Gables Guest House, Paget, Bermuda  
Wreck & Reef Diving — Shallow Waters  
Instruction & U/W Cameras Available

MERMAID'S THE REEF PEEPER 809/295-5031  
MERMAID BEACH HOTEL, SOUTH SHORE WARWICK  
Kevin Burke, Divemaster  
Rentals, Snorkeling, Instruction, Daily Boat Dives

SHAFFER'S UNDERWATER WORLD 809/297-1777  
Holiday Inn, St. George's, Bermuda  
Instruction, Rental & Air, PADI certified. 809/297-8222  
2 pools for resort & specialty classes

## BRITISH VIRGIN ISLANDS

MARINA CAY HOTEL & DIVE BVI LTD. Ph: 4-2174  
Box 76, Road Town, Tortola, B.V.I.; J. T. Giacinto  
NAUI #3491, Instr. Rentals, Air, Tours, Wreck  
Diving, etc.; 6-acre Island Diving Resort.

KILBRIDE'S UNDERWATER TOURS - Bert & Jaki  
Box 40, Saba Rock, Virgin Gorda, B.V.I. - Tel: 42746  
Guided U/W tours, Wreck & Reef Dives, the "Rhone," Anegada,  
Instr., Air, Photog., new 42' boat. Group or Ind. packages.

Charter "BONAVENTURE" for Weekly Dive Tours  
Capt. Manfred Zerbe, Road Town-Tortola Box 325, B.V.I.  
49' Motorsailer - Compressor on Board up to 8 divers.  
From \$300 per person, excellent meals & free liquor.

AQUATIC CENTRES — GEORGE & LUANA MARLER  
Box 108, Road Town, Tortola, B.V.I. Phone: 42839  
Dive the Rhone and Beautiful Reefs  
Tours - Rentals - Air - Photography Specialists

## CANADA

DIVE CAPE BRETON LTD. Tel. 902-733-2840  
P.O. Box 130, Louisburg, Nova Scotia, Canada  
Dive Tours and Packages-Individuals, Groups  
Virgin 18th Century Man O'War, Shipwrecks.

ROWAND'S REEF  
5760 Cedarbridge Way, Richmond, B.C. 273-0704  
2828 W. 4th Ave., Vancouver 732-1344  
Custom Wetsuits, Compressors, Equip. Catalog

ONTARIO DIVERS (705) 743-1015  
1040 Lansdowne St. W., Peterboro, Ontario  
U.S. Divers-Dacor-Sequest-Fitzwright Suits-Unisuits  
See Us Now For Off Season Prices

A.B. SEA PRO SHOPS  
1820 West George, Vancouver, B.C. 687-1028  
13211 King George Hwy., Surrey, B.C. 581-3303  
Sales, Service, Instruction, Rentals, Air, R.V.

LA MAISON DU PLONGEUR (THE DIVER'S HOUSE)  
2395 Labelle Blvd., Lafontaine, (St. Jerome) Que.  
Sales-Service-Rentals-Hydro-ACUC/PADI Instruction  
Rix Air - up to 4000 lbs. (514) 436-9037

RIMPAC DIVERS, LTD. (604) 656-6133  
9818 5th St., Sidney B.C., Canada V8L 2X3  
Instruction, Sales, Service, Boat Dives,  
Rentals, Air. Open every day 9 a.m.-6 p.m.

POINTS WEST DIVING (604) 980-6501  
1073 Roosevelt Cres. North Vancouver, B.C.  
Sales - Rentals - Service  
NAUI Instruction - Gulf Isds. Charters

## COLOMBIA

SCUBA CONSULTANTS (613) 226-1207  
1372 Clyde Ave., Ottawa, Canada  
San Andres, Colombia: New! Unbelievable! Superlative!  
Enquire about rates N.A. sole wholesaler

## ENGLAND

THAMES WATERSPORTS, LTD.  
179-183 Fulham Palace Road  
London W6 8QX, England  
01-381-0558

COLLINS AND CHAMBERS LTD.  
THE LONDON DIVING CENTRE. 01-985-0752  
197-201 Mare Street, London E8 3QF, England  
Everything for the Diver. Export & Mail Order.

## GUAM

INTERNATIONAL DIVERS ASSOCIATION 565-2581  
P.O. Box 6657, Tamuning, Guam 96911  
Sales-Repair-Rental-Instruction-Air  
Tours of Guam, Truk, Palau, Saipan

## HAITI

BASKIN IN THE SUN—Call toll free in U.S. 1-800-327-9789  
for the best diving and beach resorts in Haiti. PADI  
Training Facility. In Haiti call 2-1600 or airmail to  
Box 851, Port-au-Prince, Haiti

## HONDURAS

ANTHONY'S KEY RESORT - Isla Roatan, Honduras.  
Fully eqpt. scuba - Excel. shallow or deep diving right at  
resort, barrier reef. Unlimited diving, food, grp. rates  
U.S. Off: 3803 Wagonwheel Ct. Plano, Tx. 75023 214/422-1595

PIRATES' DEN HOTEL  
Sand Bay, Isla de Roatan, Honduras, C.A.  
Certified Instruction \$37.50 Inc. Room, Meals & 2 Dives  
Write for Low All Year Group Rates.

Tired of diving with a crowd?  
DIVE WITH DOC, Oak Ridge, Isla Roatan, Honduras, CA  
On Roatan's yet to be discovered South Shore  
7 nights COMPLETE: Hotel, Meals, Diving, \$130 to \$235.

BULUMANIOROATAN—Excellent wreck, wall, crevice diving.  
Tanks, air, lodging, food, unlimited diving and roundtrip  
passage from Miami or New Orleans \$425 all for 7 days. Call:  
713/467-5255, Write: 1111 Blalock #153, Houston, TX 77080.

ROATAN LODGE, Port Royal, Roatan, Honduras, C.A.  
Henry Morgan's historic pirate hideaway.  
Enjoy superb diving, sailing, beachcombing.  
Relaxed atmosphere, group rates, private airstrip.

REEF HOUSE RESORT — Oak Ridge Harbor, Roatan, Isla.  
Magnificent canyon & wall diving on fishy south shore  
Complete facilities, gourmet food, intimate atmosphere  
(214) 348-5543 8023 Skillman, Dallas, Texas 75231

## HONG KONG

FAR EAST DIVING EQUIPMENT CO., LTD./FARDIVE  
13-B Nullah Road, Kowloon, Hong Kong  
Air, Repair, Dive Tours, Rentals, Export.  
Wholesale, Retail, U.S. Divers, Nihon, Aqua-Lung

BUNN'S DIVING EQUIPMENT CORPORATION, LTD.  
306A Hennessy Road, Wanchai, Hong Kong  
Sales of complete International Equipment  
NAUI, PADI, BSAC & CMAS CERT. TOURS, SVC., RENTAL, AIR

## ISRAEL

AQUASPORT INTERNATIONAL RED SEA DIVING CENTRE, LTD.  
Coral Beach P.O. Box 300, Eilat, Israel 059-2788  
Equip. Hire, Sale, Service, Testing, Air, Cameras.  
Diving courses, Diving safaris. Tours, Boat charters

Complete Diving Svc - Indv./Grp. Tours.  
Instr.-Rentals-Guide Boat-Car-Full Accommodations  
RED SEA DIVERS CENTER tel: 057-99-295  
P.O. Box 22, Sharem El Sheich, Israel

Complete Diving Svc. - Indv./Grp. Tours.  
Instr.-Rentals-Guide Boat-Car-Full Accommodations  
RED SEA DIVERS CENTER  
Canavan Hotel, Eilat, Israel

Diving Yacht: Red Sea Divers I  
Daily Tours to Ras Mohamed, Straits of Tyran  
Complete Diving Service on Board.  
P.O. Box 22, Sharem El Sheich, Israel

AQUA-SPORT INTERNATIONAL DIVING CENTER  
POB 300, Eilat/Israel, Phone 059/2788  
Rentals, courses, daily tours, safaris, jeeps.  
All services for individuals and groups

LUCKY DIVERS—EILAT SCUBA CENTER, LTD.  
Moriah Hotel, Gulf of Red Sea. Tel: 059-3104  
ISRAEL'S NEWEST, MOST COMPLETE DIVE CTR. PADI, YMCA,  
CMAS cert. Latest Amer. gear. A/C van to sites. Boat, JetSki rent.

NEVIOT - DIVING CENTER - HOLIDAY VILLAGE  
Post Eilat, telex (07) 7783 (NEVHO-IL) Exciting diving  
"Seafaris" along the Sinai Reefs. Internationally  
recognized D. course. "Windsurfing" Write for further info

## JAPAN

MACK'S DIVING, JAPAN  
2-18-34 Nishiki Nagoya, Japan 052-211-1772  
1-640-13, Makishi Naha, Okinawa 0988-55-0434  
Charters, Rentals, Air, Instruction PADI, Tours

SEA TOPIA PRO DIVING CENTER OKINAWA, Inc.  
593 Isla, Ginowan City, Okinawa 09889-2-5567  
Custom made WET SUITS  
Sales - Repair - Rentals - Air

## MALTA

MALTA DIVING HOLIDAYS LIMITED — Tel. No. 36441  
Dragonara Casino - St. Julians - Malta  
Dive tours, instruction, sales, air, etc.  
Diving Director: Vincent Milton

## MEXICO

AQUA SAFARI 2-0101  
Cozumel, Q. Roo, Mexico 2-0661  
GEAR - AIR - BOAT - HOTEL RSVN & INFO  
Dick Tompkins, Gringo Operator

GALAPAGO-INN DIVE RESORT  
Cozumel, Q. Roo, Mexico P.O. Box 289 - Ph. 2-06-27  
New Divers Headquarters in Mex-Caribbean  
Full SCUBA, U/W Photo, Trips & Group Pkgs.

DISCOVER COZUMEL DIVE SHOP Ph. 2-02-80  
P.O. Box 75 — Isla de Cozumel, Q. Roo  
Daily dive trips, Air station, Grp. Pckge.  
Grp. rates, Lessons, Rescue Dpt., Rentals.

AQUA TOURS — Dive the Yucatan Reefs!  
Can Cun, Q. Roo, Mexico. P.O. Box 528. Ph. 30100  
Daily trips to I. Mujeres, Nizuc & P. Morelos  
Instruction, rentals, group rates

## MICRONESIA/GUAM

INTERNATIONAL DIVERS ASSOCIATION 745-2581  
P.O. Box 6657, Tamuning, Guam 96911  
Sales - Repair - Rental - Instruction - Air  
Tours of Guam, Truk, Palau, Saipan



**Diver's Directory**

(CONTINUED FROM PRECEDING PAGE)

MICRONESIA AQUATICS of TRUK LAGOON—Tours arranged for diving Truk Lagoon—Boats & Guides - Sales - Instr Rental-Air-Hotel Reservations-Complete tour & dive svcs. P.O. Box 57, Truk Lagoon, E.C.I. 96942

**NETHERLANDS ANTILLES**

SUB SEA SAFARIS N.V.  
Aruba Sheraton Hotel N.A. Tel.: 3900 or 4617  
Open 7 days a week 9.00-17.00 Diving - Cruises - Repairs - Snorkel - Rental - Air - Instruction - Retail.

AQUAVENTURE, BONAIRE (212) 751-3311  
Dive with Capt. Don, Stay at Divers Habitat (bungalows) fully furnished - Instruc. - photo Reef trips - Nite dives - snorkel - rentals - air

UNDERWATER RESEARCH CENTER  
Box 234, St. Maarten, Neth. Antilles, N.W.I.  
NAUI/PADI Inst. - Guided Wreck/Reef dives  
Snorkel & SCUBA, Night Diving, Rentals

BLUE REEF WATERSPORTS  
Box 346, St. Maarten, Netherlands Antilles  
PADI Instru. Reef/Wreck and Night Dives  
Expeditions to Out Islands. Rentals

**PANAMA**

SAN BLAS ISLAND  
Moody's Pidentupo Village - Box 6-4092 El Dorado,  
Panama, Rep. Panama — compressor-shallow or deep  
diving in Cuna Indian Reservation

**PHILIPPINES**

BUNN'S PHILIPPINES DIVING EQUIPMENT CORP.  
928 Pasay Road, Makati, Metro Manila - 853-676 or 872-134  
P.A.D.I. Instruction, Rentals, Sales, Air, Repair  
Dive Master Services, Tours, Custom Suits

AQUAVENTURE (PHIL.) INC./DIVE 7000 RESORTS  
\*708 Aurora Blvd., Queson City 79-86-48  
\*908 Pasay Road, Makati, Metro Manila 70-05-88  
Dive Tours. Equip. Sale, Rental, PADI Instr. Air

SEA-US CORP. AT SPECIAL SERVICES  
Box 12, NAVSTA SUBIC, Philippines  
FPO San Francisco, CA 96651  
Navy Cert., Air, Instr., Rentals, Repair, Maint.

**PUERTO RICO**

PUERTO RICO Luquillo beach house, 3 bedrms.  
For rent Weekly. Groups invited.  
Air, Instructor nearby (212) 233-5314  
Edward Pinney, Box 460, Gracie Sta., New York, NY 10028

VIEQUES DIVERS—Full Service, Diesel Boat 36', Air,  
Rentals, PADI Instr., Spearfishing, Live Reefs,  
Customized diving, \$30.00 two tanks, 80' + vis.  
Vieques, Puerto Rico 00765 Tel: (809) 762-9702

DIVE P.R. VIRGIN ISLANDS DAILY or WEEKLY 36'  
DIVE BOAT INNOVATION. Capt. GREG KORWEK (NAUI)  
CARIBBEAN SCHOOL of AQUATICS. LA CONCHA Hotel  
Box 4195, San Juan, PR (809) 723-6090, 724-7609

**SOUTH PACIFIC**

SCUBAHIRE — Fiji's only Scuba SPECIALISTS.  
Div. expd. Fast Charter Boats, Gear Hire, air  
DUTY FREE Gear. P.O. Box 777, Suva. Ph. 361-241  
Tradewinds Hotel Marina. Write for brochure

**TAIWAN**

TAIPEI DIVING & MARINE PRODUCTS ENTERPRISES CO., LTD.  
4, Alley 5, Lane 12 Ba Teh Road, Sec. 3, Taipei, R.O.C.  
PADI Instruction, Rentals, Sales, Air, Repair  
Agents for U.S. Divers, Nihon Aqua-Lung

**TOBAGO**

SCUBA CONSULTANTS (613) 226-1207  
1372 Clyde Ave., Ottawa, Canada. Tobago: Heaven's dive  
paradise on earth. Inquire about excellent pkgs.  
N.A. sole wholesalers!

**UNITED ARAB EMIRATES**

KANOO TOURS, P.O. Box 153, SHARJAH, U.A.E. TLX: 5451 DB  
Dive the Arabian Gulf and Coast of Oman. Res. instructor  
Virgin wrecks, Oyster beds, Coral reefs, Superb photography  
Pk. tours from U.S. Oct. thru May. Member Y.B.A. Kanoo Grp.

**VIRGIN ISLANDS**

JOE VOGEL (Ex-UDT) 809-774-2 21  
P.O. Box 7322, St. Thomas, USVI 00801 809/775-1610  
Scuba Instr. & Reef Trips - Night Dives  
Oldest Cert. Diving School in US V.I.

CARIBBEAN SEA ADVENTURES INC. (809) 773-5922  
Box 3015, Christiansted, St. Croix, USVI 00820  
Complete Dive Shops Kings Wharf & 538 Company St.  
Dive all St. Croix's Best Sites.

CARIBBEAN DIVERS 809/775-1935  
Red Hook, St. Thomas, V.I. 00801  
Tours, Instruction, Rental, Accom. Available  
Fresh Air - Full Service Dive Shop - Group Rates

AQUA ACTION 775-3275  
Wintberg Peak, St. Thomas  
Scuba instruction/boat tours, wrecks  
photog., air fills, night dives

WATERSPORTS CENTER 775-0755/774-5649  
Sapphire Bay - Box 2432 - St. Thomas, V.I.  
Scuba Instruction, Boat Dives, Night Dives  
Reef & Wreck Dives-U/W Photo-Air-Rental-NAUI, PADI

VIRGIN ISLAND DIVING SCHOOLS AND SUPPLIES 809-774-8687  
Box 9707, St. Thomas, USVI 00801  
Tours & Classes for Beg. & Adv., Air Sales, Service  
Rntl., Photo, Grps., Night Dives, Carib's most comp. dive fac.

ST. JOHN WATERSPORTS (THE DIVE SHOP)  
Box 161 Cruz Bay, St. John VI 00830 (809) 776-6256  
Scuba, Snorkel, Day Sail, Sport Fishing Tours-Daily  
Full Service Dive Shop-Air-Rentals-U/W Photo PADI-YMCA

PRESSURE, LTD. (809) 77-DIVER  
U/W Tours Day/Night, Photo, Rentals, Air, Instruction  
Hotel Pkgs., Shop and Boats on C'sted Wharf  
Box 3612, Christiansted, St. Croix, U.S.V.I. 00820

**WEST INDIES**

SURFSIDE WATER SPORTS Box 26, Grand Cayman, BWI  
Watersports & diving serving all Cayman Hotels  
Personalized dive trips — instruction — equip. &  
boat rentals — dive pkgs — Accom. — Tel. 9-2724

RUM POINT CLUB—P.O. Box 510, Grand Cayman, B.W.I.  
Intimate dive resort. Instr. in scuba, all equipment,  
U/W Photo, 5 mins. to Cayman Wall. Caves, Wrecks,  
Snorkel from our beach. Tour packages available.

FLAG ROYAL PALMS, Royal Palms Hotel  
P.O. Box 490, Grand Cayman, B.W.I. Tel: 92636  
Diving - Sailing Cruises - 40 Ft. Ketch - Up to 4 persons  
Daily - Weekly - Monthly Rates

DIVE ST. VINCENT LTD.  
Box #864, St. Vincent, West Indies  
Tours, Rentals, Air, Sales  
PADI training facility. Write for information.

DIVE ST. LUCIA LTD. Tel. 4127  
P.O. Box 412, Castries, St. Lucia, W.I.  
Complete Scuba Diving Services & Accom.  
Dive Packages, Certified Instr. Guides

TORTUGA CLUB — GRAND CAYMAN ISLANDS, Best diving  
anywhere - NAUI Certif. Courses, 2 tk. boat dive daily, tennis,  
sailing, water ski incl., A/C rms. on beach - Free brochure: Dept.  
SD, Motivating Graphics, 2050-1 Tigertail Bl., Dania, FL 33004

**RED SEA DIVE SAFARI**

Aqua Sport International/Red  
Sea Diving Center Ltd. in Eilat,  
Israel, is now a PADI Training Facility.  
The center offers all PADI mem-  
bers a complete camping/diving sa-  
fari along the coast of the Sinai Red  
Sea at \$35 per day. Portable diesel  
compressors are available at \$25 per  
day for self-tailored dive safaris.  
PADI dive courses are held on the  
second and last Mondays of the  
month. For details contact: Aqua  
Sport International, P.O. Box 300,  
Eilat, Israel.

**\*8 days/7 nights****\*Saturday Departures****\* All Inclusive****Round trip from Tampa****3 meals daily**

• with wine and beer

**Beachfront rooms**

• terrace or patio

• air conditioned

**Scuba diving — 6 days****Large pool****Optional Activities**

• tennis • sailing

• horseback riding

• volleyball • bicycles

• Havana Tour

**Yes, I want to SCUBACUBA****CARIBBEAN ADVENTURES (INC.)**1410 AVENUE OF THE AMERICAS  
NEW YORK, NEW YORK 100195025 ROSWELL ROAD NE  
ATLANTA, GEORGIA 30342Toll Free: (800) 223-0245  
New York State: (212) JU 2-7574

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_

ZIP \_\_\_\_\_

PHONE NUMBER \_\_\_\_\_

Enclose \$4.95+.90¢ per **SCUBACUBA** T shirtsize ☐ S ☐ M ☐ L ☐ XL



# skin diver presents

## The Flamingo Tongue

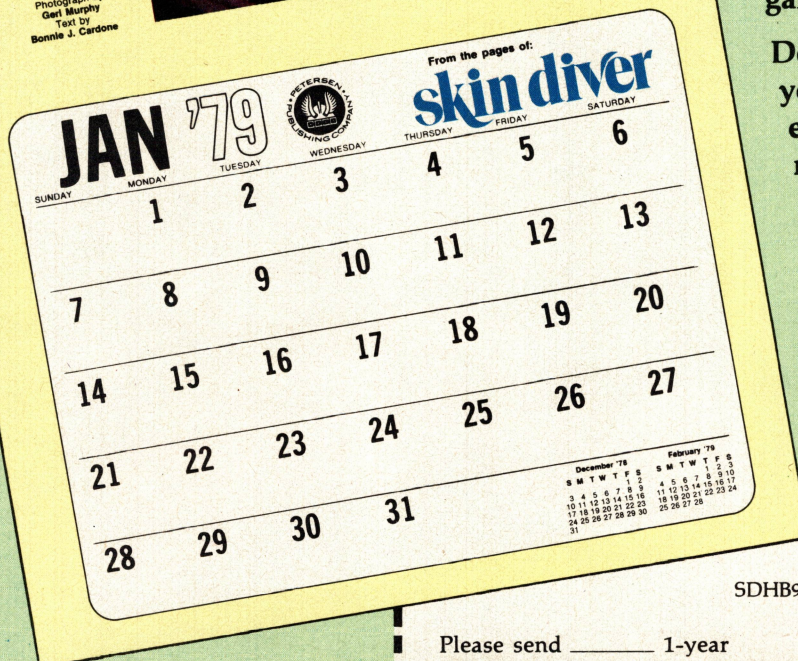
Inexperienced shell collectors often excitedly grab this shell, thinking they have secured a rare prize. Topside, however, they discover it is the animal itself and not its home that is so striking. The shell of the flamingo tongue, a common gastropod, is an unremarkable creamy white, with delicate shadings of pale orange. It is the mantle of the animal, with orange spots outlined in black, that is beautiful.

Found from the Carolinas to the West Indies, a mature *Cyphoma gibbosus* is about an inch long, with a dorsal hump or ridge and a toothless aperture which runs the entire length of the ventral side. Related to the cowry family, it is able to extend its mantle so it covers the entire shell, continuously secreting layers of nacre which repair the shell and maintain the smooth, glossy surface.

The young of the flamingo tongue are free-swimming veliger larvae. Each eventually settles on a seafan, which provides a home and dinners as well, because the shell eats the seafan polype.

Male flamingo tongues are extremely territorial and will attack any new males trying to occupy the particular seafans on which they live.

Photograph by  
Carl Murphy  
Text by  
Bonnie J. Cardone



## all the color and adventure of the underwater world!

When you subscribe to Skin Diver for 1-year you'll receive *FREE* this beautiful full-color calendar featuring 12 outstanding photographs from Skin Diver's own superb underwater gallery.

Don't forget to enter subscriptions for all your friends... along with you they will enjoy receiving the most respected magazine in the diving field plus their own magnificent 11" x 17" Skin Diver Calendar!

**AVAILABLE IN  
LIMITED QUANTITIES  
AND ONLY THROUGH  
SUBSCRIPTION  
PURCHASE.**

My Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

**PLEASE ENTER THE FOLLOWING  
GIFT SUBSCRIPTION:**

To \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

"From \_\_\_\_\_"

☐ I have listed additional gift subscription orders on the attached sheet.

\*U.S., Territories & Military only. Other countries add \$3 per subscription for postage. Offer expires January 31, 1979. (Please allow us up to 60 days to get the calendar and the first copy of a new order into the mail. Watch for them!)

Please send \_\_\_\_\_ 1-year subscription(s) including the 1979 calendar as shown. My full payment is enclosed.

- ☐ Renew.  
☐ Enter my subscription.  
☐ No subscription for me.

**TO ANNOUNCE  
YOUR GIFT SUBSCRIPTIONS**

We include a custom designed Christmas card, hand-signed with you name and delivered just in time for Christmas!

**skin diver**

6725 Sunset Blvd., P.O. Box 3295 Los Angeles, CA 90028



# United States Virgin Islands

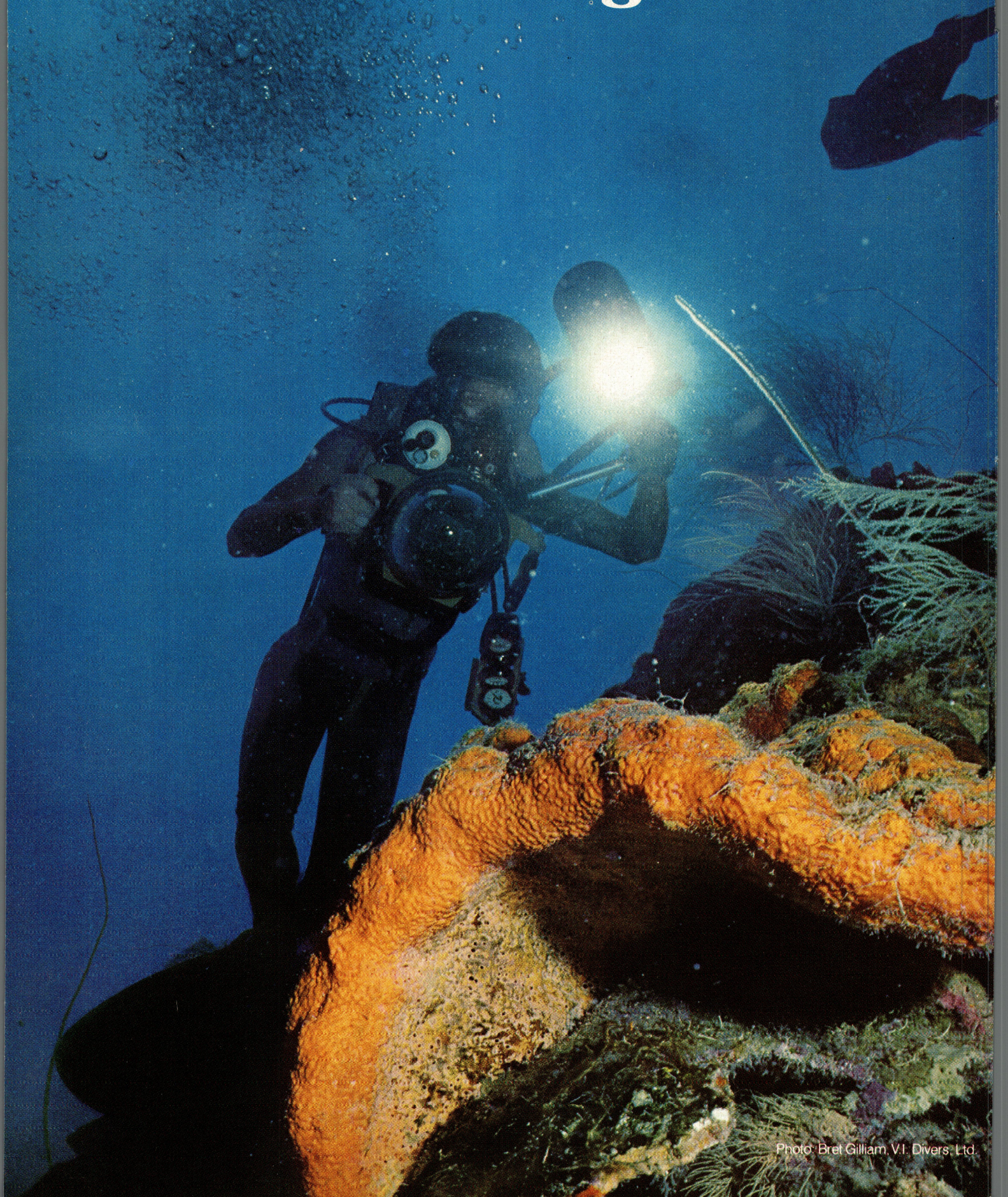


Photo: Bret Gilliam, V.I. Divers, Ltd.



# What a life.

Diving in the United States Virgin Islands. Excellent visibility (this photo taken at a depth of 85 feet). Spectacular dive locations reached from the beach as well as a boat. Well-organized dive centers. Lots of place-hopping and people-meeting at night. Write directly to the centers listed for details in their area.

## St. Croix:

Caribbean Dive & Sport Center, SD11,  
53B Company Street, Christiansted 00820  
Tel: (809) 773-6011

Caribbean Sea Adventures, SD11,  
Kings Wharf, Christiansted 00820  
Tel: (809) 773-5922

Do It Fluid Tours, SD11,  
Box 3234, Christiansted 00820  
Tel: (809) 778-0882

Mar y Sol Divers, SD11,  
10 Strand Street, Frederiksted 00840  
Tel: (809) 772-3701

North Star Dive Tours, SD11,  
Box 3461, Christiansted 00820  
Tel: (809) 778-0825

Oceanic Enterprises, SD11,  
Kings Alley Dock, Christiansted 00820  
Tel: (809) 773-6015

Pressure Ltd., SD11,  
Box 3612, Christiansted 00820  
Tel: (809) 773-2678

V.I. Divers, Ltd., SD11,  
PanAm Pavilion, Christiansted 00820  
Tel: (809) 773-6045

**St. John:** (Zip Code 00830)  
Caneel Bay Plantation, SD11,  
Caneel Bay Tel: (809) 776-6111  
St. John Water Sports, SD11,  
Box 161, Cruz Bay Tel: (809) 776-6256

**St. Thomas:** (Zip Code 00801)  
Aqua-Action Inc., SD11,  
Wintberg Peak Tel: (809) 775-3275  
Bologno Bay Beach & Dive Club, SD11,  
Box 3381 Tel: (809) 775-1800  
Caribbean Divers, SD11,  
Red Hook Tel: (809) 775-1935  
Frenchman's Reef Undersea Centre, SD11,  
Charlotte Amalie Tel: (809) 774-8500  
John Hamber Aqua Lung Center, SD11,  
Box 2432 Tel: (809) 775-0755  
St. Thomas Diving Club, SD11,  
Box 4976 Tel: (809) 774-1376  
Virgin Islands Diving School, SD11,  
Box 9707 Tel: (809) 774-8687

Joe Vogel Diving Company, SD11,  
Box 7322 Tel: (809) 774-2321

## United States Virgin Islands

St. Croix • St. John • St. Thomas

© 1978 United States Virgin Islands Division  
of Tourism, Box 1692, St. Thomas 00801.

## GO DIVING, INC. ROATAN

Go Diving, Inc. will be offering group departures to Anthony's Key Resort in Roatan, Honduras. Starting in January, Go Diving has scheduled Saturday departures out of New Orleans to this beautiful Caribbean destination every week-end. The package includes round trip air fare from New Orleans to Roatan, seven nights at Anthony's Key Resort, six full days of unlimited diving, all meals, transfers and gratuities. The cost is \$575 for divers, \$485 for non-divers.

For more information, contact:  
Go Diving, Inc., 715 Florida Ave.  
S., Minneapolis, MN 55426.

## DIVE IRELAND

Divewest Limited, in Burtonport, County Donegal, Ireland, offers interesting dive trips for experienced divers. The company operates a 30 foot motor sailer and an inflatable with outboard. Air is supplied from a 5½ cf Bauer compressor, and a comprehensive range of modern dive equipment is available for rent at the dive center in Burtonport.

Accommodations range from self-catering chalets (based on four persons sharing) at L40 per week per person to guest houses with full

board at L70 per week per person. Hotels with full board are available at L85 per week per person. These prices include approximately six boat dives and air. Special rates apply to parties of six or more. Non-diving family members and friends are welcome and will be accommodated on the boat, room permitting. Separate dive boat trips are also available at L5 per boat dive, including air. Log books may be inspected.

For information, contact: Gordon Wallace, c/o Divewest Ltd., Burtonport, Co. Donegal, Ireland.

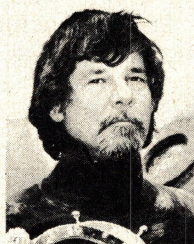
## AMERICAN DIVE TOURS TO HAWAII

American Dive Tours has become American Dive Hawaii, Inc., a full-service dive shop with two Worthington 25 cfm compressors and a 10 cfm Ingersoll Rand compressor.

In addition to a rental and repair service, the shop offers private, semi-private, and regular monthly classes in all levels of diving. It also offers classes in First Aid and CPR.

The shop's fleet of five nine-passenger vans can handle 40 people during both morning and afternoon tours.

For information, contact: American Dive Hawaii, Inc., 514-C Piikoi St., Honolulu, Hawaii, 96814.



**Robert J. Shourot**  
President, Undersea Systems, Inc.  
Coastal Diving Operations, Inc.  
Director, Coastal Diving Academy


## "NOW I'LL BE ABLE TO SERVICE YOU FROM THE VIRGIN ISLANDS TOO!"

Beginner or professional, student and scientist, join us on a venture you're not likely to forget. Dive the beautiful Caribbean reefs, wrecks, and walls, live aboard the R/V Black Coral. She heads south this winter for group or open charter.

### Send for Cruise/Dive details concerning

- Basic and advanced scuba certifications (P.A.D.I., N.A.U.I., and Y.M.C.A.)
  - Instructor certification programs
  - Underwater photography programs
  - Special rates for dive shops
  - R/V Black Coral specs and schedules
  - Vessel will operate out of Villa Olga, St. Thomas
- Colleges, write for special rates for accredited oceanography programs.

**Write To: RESEARCH VESSEL BLACK CORAL**  
108 W. Main Street, Bay Shore, New York 11706  
(516) 666-3127 (800) 223-5695



**RESEARCH VESSEL BLACK CORAL**  
108 W. Main Street, SDBC-1  
Bay Shore, New York 11706

Name

Address

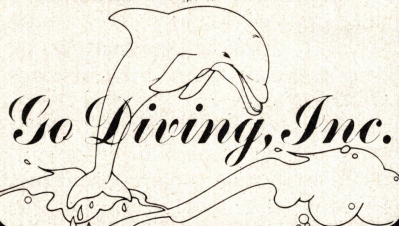
City  State  Zip

Telephone (  )





715 Florida Avenue South • Minneapolis, Minnesota 55426 • (612) 544-7168



What are you hoping for in a diving vacation? Beautiful, fish-filled reefs? Warm, clear water? A smooth-running tour? Reasonable prices? Then you should go diving with Go Diving, Inc.

**ROATAN HAWAII**  
**COZUMEL VIRGIN ISLANDS**  
**BELIZE GUANAJA**

Wherever you want to go, the most complete packages at the best prices are from Go Diving, Inc.

We know you won't believe it just because we say it in this ad. So write for a free brochure on our individual and group tours. Then write the others. Compare. And, have a nice trip.



**56' luxury trimaran**

**MISTY LAW**

Sail and dive cruises throughout the  
**BRITISH AND AMERICAN VIRGIN ISLANDS**  
**13 DAYS, 12 NIGHTS—\$780** (only \$65 per night)

**What you get:**

- 4 two person cabins with private bathrooms
- All equipment and air
- Professional instruction/guiding
- 3 good meals per day
- Free sodas, beer, liquor any time; wine with dinner
- Fast exciting sailing, beautiful night stops, deserted beaches, water skiing, wind surfing
- Better and more varied diving than you could possibly get land based
- Plenty of interest for non-divers too

We tailor cruises to suit all standards and can also quote for group booked tours of any length throughout the Caribbean, particularly in Winter.

TRIMARINE BOAT CO. LTD.  
HOMEPORT, ST. THOMAS, U.S.V.I. 00801  
or phone (809) 774-5630



CRUISE SOUTH • BY CAR

**CORAL LAGOON**  
**DIVING RESORT**

KITCHENS-DOCKS-COLOR T.V.  
TENNIS COURT-F.W. POOL

REEF TRIPS complete DIVE SHOP  
Fast custom fiberglass 20 and 6 pass. boats  
Individual or group rates. Also Cay Sal trips (6)  
**MARATHON 33050 FLORIDA**  
305-289-0121 **KEYS**

## Go soak your head in Hawaii.

We have it all. Half-day dives, full-day dives, shelling dives, specialty dives, boats, instruction, and equipment...plus some of the most incredible weather and water on the face of the good ship Earth. We also have golf, tennis, fishing, skiing, luaus, leis, and grass skirts. It's in Kona, on Hawaii, at



**HAWAIIAN DIVERS**

Box 572 Kailua-Kona Hawaii 96740  
(808) 329-3407

## Gone Down Lately AT PENNEKAMP?

Dive aboard 48'  
**GOOD TIME CHARLIE**  
... We carry O<sub>2</sub> For your safety  
... Open Water Checkouts

**NIKONOS**  
**REPAIR**  
**CENTER**

Write for Color Brochures

**BILL CRAWFORD'S**  
**TROPIC ISLE DIVE SHOP**

P.O. Box 755-B Key Largo, FL. 33037  
Mile 103.5 Tel. 305-451-1063

## Virgin Gorda

Jahi & Bort Kilbride request the honor of your presence at Virgin Gorda, the best of the British Virgin Islands.

SPEND A FABULOUS WEEK DIVING AMONGST THE FRIENDLIEST FISH IN THE CARIBBEAN ON AN UNBELIEVABLE VARIETY OF SITES — WRECKS (INCLUDING THE FAMOUS RHONE), CORAL REEFS AND THE GRAVEYARD OF ANEGADA. **R.S.V.P.**

**Kilbrides Underwater**  
**Tours Attn: Box 40**  
**Virgin Gorda. B.V.I.**



## Tired of???

Hidden extra costs? Broken compressors? Tiny dive boats? Only 1 or 2 tanks per day?

Maybe it's time you moved up to See & Sea. For twelve years we've offered the MOST diving, the BEST diving, and the LOWEST COST PER DIVE, all over the world. Join us in Cayman, Philippines, Virgin Islands, Galapagos, Belize, Red Sea, Australia, Fiji, Tahiti, Micronesia and Maldives/Sri Lanka.



**See & Sea**

680 BEACH ST / SUITE 340 / WHARFSIDE  
SAN FRANCISCO, CALIFORNIA 94109  
TELEPHONE (415) 771 0077

TRAVEL  
SERVICE,  
INC.

**Lowest Cost Per Dive**

GREATEST DIVING ANYWHERE!



**Grand Cayman Islands**

Dive Underwater Castle, Garden of Eden, East Wall Drop Off, Wreck of the Ten Sails and more! Tennis, water skiing, sailing, and bicycles included with two scuba dives a day in room rate. No charge for all necessary diving equipment or boat trips (off-season rates start at \$59.50 per person/day double occupancy MAP). Private or group instruction arranged by full time NAUI Instructor. Non-diver rates (same room) save \$19.00 per day. Hotel recently remodeled with new dive gear and boats. All rooms air conditioned. Ask about our "Lovers Package". For free brochure write: Tortuga, Dept. SDM, Motivating Graphics, 2050-1 Tigertail Blvd., Dania, FL 33004



## DIVE CAYMAN IN ROYAL STYLE

Flag Diving at Royal Palms

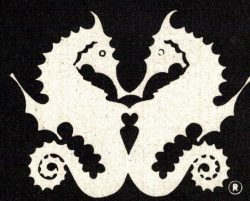
Mention this ad when reserving your dive package at the Friendliest Diving Hotel on Seven Mile Beach and your eighth night will be completely free. 3 dive boats, 3 certified instructors, top quality equipment.

**Royal Palms of Cayman**  
Box 490, Grand Cayman, B.W.I.



## Virgin Islands

Live aboard the superb 75-foot "EROS." Magnificent coral gardens, wreck of the "Rhone," spectacular night diving. Excellent food and comfortable quarters. Anchored always over your dive site. Unlimited diving. Scheduled 7 day diving cruises every month. Exclusive group charters available.



**See  
&  
Sea**

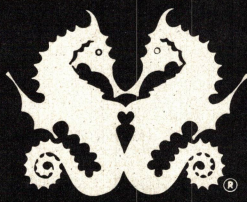
680 BEACH ST./SUITE 340/WHARFSIDE  
SAN FRANCISCO, CALIFORNIA 94109  
TELEPHONE (415) 771 0077

TRAVEL  
SERVICE,  
INC.

**Lowest Cost Per Dive**

## Dive Cozumel

Dive Cozumel and the spectacular Palancar Reef off the Yucatan coast of Mexico. Excellent resort hotel, comfortable diving boat with expert crew. Thousands of satisfied See & Sea divers since 1966.



**See  
&  
Sea**

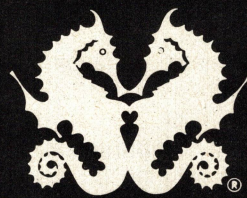
680 BEACH ST./SUITE 340/WHARFSIDE  
SAN FRANCISCO, CALIFORNIA 94109  
TELEPHONE (415) 771 0077

TRAVEL  
SERVICE,  
INC.

**Lowest Cost Per Dive**

## Philippines

Live aboard the magnificent 102 foot "Sea Quest." Exotic diving on remote and primitive offshore islands. Superb food, photographer's dream, the world's richest marine life. Scheduled 17 day cruises. Exclusive group charters available.



**See  
&  
Sea**

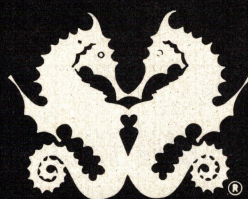
680 BEACH ST./SUITE 340/WHARFSIDE  
SAN FRANCISCO, CALIFORNIA 94109  
TELEPHONE (415) 771 0077

TRAVEL  
SERVICE,  
INC.

**Lowest Cost Per Dive**

## Dive Cayman

Live aboard Paul Humann's "Cayman Diver," the best equipped diving cruiser in the Caribbean: air conditioned quarters, gourmet meals. Exotic diving on virgin reefs: photographers's paradise, night diving. Scheduled 7 day diving cruises every month. Exclusive group charters available.



**See  
&  
Sea**

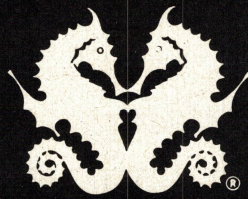
680 BEACH ST./SUITE 340/WHARFSIDE  
SAN FRANCISCO, CALIFORNIA 94109  
TELEPHONE (415) 771 0077

TRAVEL  
SERVICE,  
INC.

**Lowest Cost Per Dive**

## DIVE BELIZE

Live aboard the spectacular 85-foot "Belize SunDiver," Dive Lighthouse Cay, Turneffe Reef, Blue Hole, fabulous night diving. Superb food and air conditioned double cabins for 12 divers. Unlimited diving. Scheduled 7-day diving cruises every month. Exclusive group charters available.



**See  
&  
Sea**

680 BEACH ST./SUITE 340/WHARFSIDE  
SAN FRANCISCO, CALIFORNIA 94109  
TELEPHONE (415) 771 0077

TRAVEL  
SERVICE,  
INC.

**Lowest Cost Per Dive**

## ENJOY UNDERWATER PHOTOGRAPHY

with

**JIM & CATHY CHURCH**

at SPANISH BAY REEF RESORT, GRAND CAYMAN  
FEBRUARY & MARCH JULY & AUGUST

**WE HAVE PHOTO COURSES TO FIT ALL LEVELS OF EXPERIENCE**

**BASIC U/W PHOTO COURSE**  
(for even the most beginning beginner)

**CRITTER-PHOTO COURSE**

**COMPOSITION & TECHNIQUES**  
(for advanced & repeat students)

**ADVANCED PHOTOGRAPHY**  
(with extra night dives)

You can't get two better teachers anywhere. We offer the best equipped, most thorough, full-service photo course in the Caribbean. At the Caribbean's finest diving resort — excellent food, superb diving.

For details, write: Jim & Cathy Church  
P.O. Box 80, Gilroy, CA 95020  
or phone: (408) 842-9682

## HAWAII with Central Pacific Divers

### Superb Diving

6 Islands

### Hawaii's Finest Dive Boats

Professional  
Guides

### Complete Scuba Certification

5 Day Ocean Course

### Two Locations:

Kailua, Kona  
Lahaina, Maui

### Central Pacific Divers for Diving Information:

780 Front St., Lahaina, Maui, HI 96761 (808) 661-4661  
74-5484 Kaiwi St., Kailua-Kona, HI 96740 329-3168



## DIVE BAJA!

Explore the wondrous sea of Cortez in an exclusively remote setting. We have tanks, air stations and boats. Group and Package rates available. U.S. office: Post Office Box 1044, Los Altos, CA 94022, or phone (415) 948-5505 for reservations.

Resort Hotel

**Punta  
Pescadero**

Baja Sur, East Cape, Mexico.

## SCUBA

**WRECK DIVING**  
on the Atlantic's  
northernmost living  
coral reef.

ITS-EAISB-1

**\$155\***

4 days/3 nights from  
Breakfast & dinner daily • 4 dives,  
instruction for beginners, all equipment  
& airfills • Certified resident instructors.  
Dive shop

\*per person/double occupancy, Dec. 1, 1978-  
Feb. 28, 1979. Subject to availability. Airfare,  
tax and tips not included. No refunds on  
unused features.

**Reservations: Call SRS toll  
free: (800) 225-1372.**

MA: (800) 842-1202  
TORONTO: (416) 962-5711  
MONTREAL: (514) 861-9074.

**SONESTA  
BEACH  
HOTEL**

Southampton, Bermuda

**Bermuda**





**Announcing the opening of a Virgin Island Diving Resort that has it all.** Economical room rates, great restaurant, seaside location, walking distance to town... and diving, diving.

**Three diving companies to serve you.** Featuring the Caribbean's top names in diving: Armando Jenik...Palmer Williams...Gary Deering. Group rates to individuals. Every week begins a new program.

Write or call us for a free brochure. Telephone 809-774-1376. P.O. Box 4976, St. Thomas, U.S. Virgin Islands 00801. Reservations call N.Y. 212-730-8100, or Elsewhere Toll Free 800-223-5695

Experience some of the Caribbean's finest drop-off and wreck diving from our luxury dive boats that put the comfort back into diving.

We cater to the experienced diver and underwater photographer and understand your needs. We get you to the best sites; Buck Island Reef, Cane Bay Drop-off, the wreck of the RHONE, etc. Our guides are instructor/photographers and our facility is the largest and most complete in the islands.

Find out why we enjoy more repeat business than any other operation in the Virgin Islands. Several programs to fit your diving interests and budget from as low as \$200.00 per week.

Write for detailed brochure with photos. We know that you can't do better.

Pan Am Pavilion, Christiansted, St. Croix, U.S.V.I. 00820



BRET C. GILLIAM, President

**V.I. DIVERS, LTD.**

## Interested in a Love Affair?

Join us in our love affair with the sea. Sail & Dive Expeditions, living aboard offshore sailing yachts, visit remote reefs and untouched wrecks of Western Caribbean including the Blue Hole with marine life experts. SCUBA, underwater photography and archaeology instruction.

Box 431K11  
Ho-Ho-Kus,  
N.J. 07423  
201/447-0393



**Adventure Cruises**  
THE MOST IN REAL BAHAMA DIVING  
FREE BROCHURE  
P.O. Box 22284, Ft. Lauderdale, Fla. 33315

**FANTASTIC Florida Keys Diving**  
• Complete diving facilities  
• Discount Air to guests—Package tours  
• Rental Equipment—Boats  
• Family units—Villas—A/C—TV  
• Pool—Lessons—YMCA—PADI Instr.  
• Boat ramp—Dock—Basin  
(305) 664-4955  
Free Brochure—Box 575 S.D. Islamorada, Fla 33036

**COZUMEL ISLA IS AMONG THE TOP 7 OF THE FINEST DIVING AREAS IN THE WORLD.**  
HOTEL "BAHIA", A HOTEL FOR DIVERS HAS THE LOWEST RATES IN TOWN WITH THESE FACILITIES:  
• American Express and BankAmericard (VISA) cards honored.  
• Air conditioned rooms with private bath. • Ocean front.  
• In town, where it's Happening...  
Write us: Hotel "Bahia", P.O. Box 286, Cozumel Isla, Mexico. Phone: 2-02-09

**DIVE CUBA** Deluxe 84 unit Colony Hotel on Isle of Pines. Two 65' dive boats—all new dive equipment. Recently, several returning dive groups said it was some of best diving in all Caribbean. Restaurant, lounge, & international discotheque. Entertainment nightly flown in from Havana. All inclusive package. Weekly flights.  
Caribbean Adventures, LTD.  
Box 685, Land o Lakes, FL 33539

**DAVE McLEOD'S SKIN DIVING ADVENTURES**  
Great Family Diving in Bermuda • Many Shallow Water Wrecks 30 Ft. • Lots of Fish and Coral • Something for Everyone • Novice to Pro • Diving Instruction & Underwater Cameras Available  
The Gables Guest House • Harbour Road • Paget • Bermuda Cables: "Gables, Bermuda"  
Telephone: 809/29-16207

**DIVE THE EXUMA CAYS THE BEST OF THE BAHAMAS**  
—71' Diving Yacht —Free Air  
—Unlimited Diving —Excellent Food  
—Wall Dives —Economical Price  
—Night Dives —Groups Only  
**R/V DRAGON LADY** 800 S.E. 17th St.  
Ft. Lauderdale, Fla. 33316

**Tarpon Lodge** DIVE the Beautiful **FLORIDA KEYS** with your hosts RON & JOAN SCHILKE  
Ph. (305) 743-5555  
Complete Diver & Family Resort  
5 minutes from Airport  
• Family Units—Villas—A/C—TV  
• Lessons—Pool—Boat & Equip. Rentals  
• Air Station—Repairs—U/W Photography  
• Ramp—Marina—Fuel—Charter Boats  
• Restaurant—Lounge—TIKI Bar—Tennis  
FREE MAP & BROCHURE—TARPON LODGE—MARATHON, FLORIDA 33050

**DIVE ANTIGUA LONG BAY HOTEL**  
Beautiful resort surrounded by reefs, starting just off a great beach. All facilities for snorkeling, scuba, sailing, and deep sea fishing. Special divers' rates and group packages. 3 1/2 hour direct flights from N.Y.  
**WRITE: LONG BAY HOTEL**  
Box 442, Antigua, West Indies.

**LUCKY III DIVE & SAIL**  
U.S. and British Virgin Islands  
41' Sloop Onboard Compressor  
Equipped for 6 Divers  
**LEO WHITE**  
**LUCKY III CHARTER**  
Homeport, St. Thomas, U.S. Virgin Islands 00801 Tel. 809/774-5630

**Galapago-irr DIVE RESORT**  
Dive the clear waters of Palancar Reef. Explore hidden caves, mangroves and coral reefs. Complete scuba facilities, trips and group packages. U/W photo. P.O. Box 289, Cozumel, Mexico • Ph: (987) 20663

**Share Ownership of Caribbean Isle Resort**  
Time-shared ownership of a beautiful Caribbean island dive resort located on Cayos Cochinos, Bay Islands, Honduras. Owners entitled to use of entire resort for 2 to 6 weeks per year for next 55 years. Fully equipped dive resort with a staff of 3, including American dive master. Accommodates 12. Includes compressors, generator, dive boats, sail boats, tanks. Snorkeling, beach and boat diving, sailing, hiking. Access from New Orleans or Miami to Le Ceiba, Honduras. For more information, call 713/782-4771 or 713/780-0100 from 10 a.m. to 6 p.m.

**BELIZE Central America**  
Virgin diving on a Caribbean coral atoll  
**10 DAYS \$475 ALL INCL.**  
PRIVATE CABIN ON THE BEACH OVERLOOKING THE REEF, ALL MEALS, TANK, AIR, BOATS, GUIDES, 8 full days of diving.  
Shorter packages available for groups of 16 to 27; group rates.  
FIVE DAY CRUISE ON 50 FT. DIESEL SAILING SLOOP "Christmas Bird" INCLUDED IN ABOVE PACKAGE FOR \$100 EXTRA PER PERSON. Glover's and Lighthouse atolls; Blue Hole; excellent diving and snorkeling; tropical island exploring; or design your own cruise for group of 4 to 6.  
For literature write or call John Lidington, 14841 SW 298th Terrace, Homestead, Florida 33030 • (305) 245-1085 • or write AIR MAIL to Lomont Enterprises, Ltd., Box 563, Belize City, BELIZE, C.A. • phone 2548.

**Wonder where to go in U.S. VIRGIN ISLANDS**  
*America's paradise in the Caribbean — DON'T MISS the January Skin Diver for the first complete and comprehensive diving guide to St. Croix, St. Thomas and St. John*



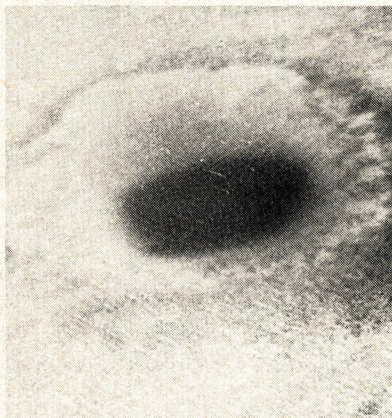
**the Virgin Islands special section goes on sale December 28**



associated with other natural phenomena of the Bermuda Triangle. So the white waters, too, remain a mystery.

### THE BLUE HOLES

The blue holes of the Bahamas are too well known to divers to be thought of as mysterious. Still,



there is much that is not known about them. From the air they seem to be just what they are: holes in the bottom of the sea, measuring 30 to 60 feet in diameter and sometimes hundreds of feet deep. On the Bahama Banks, the bottom of the sea is at a depth of only 10 to 30 feet. The blue holes are openings, usually circular in shape, in the roof of submerged limestone caverns similar to the Carlsbad Caverns of New Mexico. Inside the submerged caverns, entered through the blue holes, a diver finds stalagmites and stalagmites obviously formed by the dripping of water many thousands of years ago when these caverns were above water.

In the Bahamas there are many of these blue holes located not only at sea but also on the islands. Several of the landlocked blue holes can be seen off the end of the runway at Nassau's International Airport. They are thought to connect with blue holes at sea, which may account for the mysterious occurrence of streams of fresh water in the ocean noted from time to time by boatmen in the Bahamas.

Working for eight days off Captain Roy Gaensslen's *MV Sea Angel* out of Miami, the Sunn crew of six sailed into the Bermuda Triangle, flew into it, and dived in it, all without incident. They experienced no failures of compass, engines, or generators, and all hands returned safely. But they report that all of the phenomena they went there to photograph really do exist: the Bimini Road, the white waters, and the blue holes. And they provided an interesting dive adventure in the famous Bermuda Triangle.

Port Paradise introduces the

## 5 Day Learn-to-Dive Week from \$285.00 per person

including PADI basic scuba diver certification course, 5 nights lodging, dinner and breakfast daily, use of tank, boat, air, taxes and tips.

The Dive school at Port Paradise introduces the "smart" way to learn-to-dive. Five days of concentrated dive instruction utilizing the new PADI method assures you of learning and progressing faster. And Port Paradise, at waters edge, is the ideal place to learn-to-dive with: fine accommodations, water front restaurant and lounge, entertainment, two pools, fully equipped dive shop and marina, tennis, golf, fishing, PADI instructors, home of the Manatee, clear water, freshwater, warm water and safe water, and more. For information call toll-free or mail the coupon.

**800-451-4289**

or 904-795-3111

For complete information send coupon to:-----

### PORT PARADISE MOTEL

P.O. Box 516-Dept. SD1, Crystal River, Florida 32629

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

Phone \_\_\_\_\_

### BELIZE LODGE FOR SALE

Ambergris Caye — 1000' coral beach, cleared and planted with cocoanut palms, with six buildings and 3 generators, Pier, Famous Barrier Reef 1/2 mile offshore. Ideal for diving group.

P.O. Drawer 1090, Corpus Christi, Texas 78403.

What's your  
wave and surf  
take the test in  
December  
with **skin diver**

**IQ**

## Scuba ADVENTURES

Dive the Caymans  
Bahamas, Belize, Cozumel,  
Roatan, Honduras, Cuba  
and other Caribbean  
dive spots.

Weekly group rates available.  
Commissions to Dive Centers and Travel Agencies.

Check with your local  
authorized Scuba Tours  
International Dealer or contact:

**Scuba Tours  
International**



A Division of Metro Travel Agency  
Lincoln Center 5401 W. Kennedy Blvd. Suite 131  
Tampa, FL 33609 PH. 813-879-4255

## dive the Caymans

Sail • Dive • Ski • Fish  
Aboard the M.S. Ports of Call

Six day cruises depart  
Grand Cayman each Saturday

**VIRTUALLY UNLIMITED DIVING**  
Air Conditioned Staterooms • Superb Food



**Ports  
OF Call**

113 ft. motor sailer

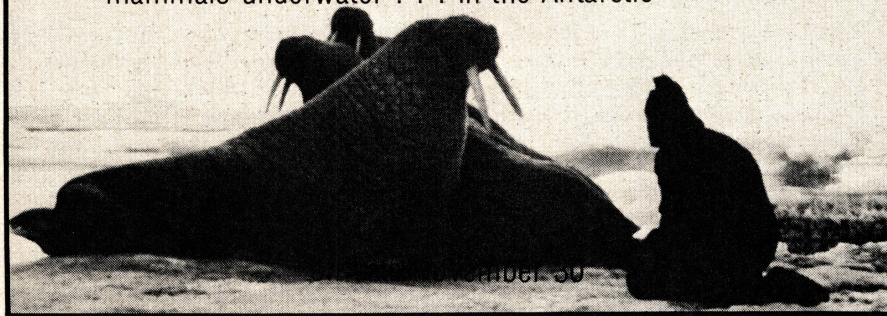
CAYMAN CRUISES INC.  
P.O. Box 19067 Houston, Texas 77024  
(713) 781-2432 or 1-800-231-6994

DIVESHIP LTD. P.O. Box 1555  
Georgetown, Grand Cayman, BWI.  
Phone: 95848 or 94478



## A Marine Revolutionist Speaks Out!

**skindiver** interviews Carleton Ray,  
the first man to take a detailed look at marine  
mammals underwater . . . in the Antarctic



## BRITISH VIRGIN ISLANDS



AQUATIC CENTRES

B.V.I. TOURIST BOARD

DIVE B.V.I. LTD.

FISCHERS COVE BEACH HOTEL

TREASURE ISLE HOTEL

KILBRIDE UNDERWATER TOURS

LITTLE DIX BAY HOTEL

MARINA CAY HOTEL

THE MOORINGS

OCEAN VIEW HOTEL

NATURE gave the RHONE a second chance. Now, her beauty shines through in a brilliant display of marine life. Come visit her — and all the other reefs and wrecks in the British Virgin Islands, unexplored and unlimited diving awaits.

*Please send further information on the British Virgin Islands*

B.V.I. TOURIST BOARD BOX 134S, ROAD TOWN, TORTOLA,  
BRITISH VIRGIN ISLANDS

Name.....

Address.....

City..... State..... Zip.....

## PHYSICIANS U/W MEDICINE PROGRAM

The Eleventh International Physicians Underwater Medicine Program has been scheduled for January 27 - February 4, 1979, at the Hotel Bonaire and the Curacao Plaza.

The academic program is sponsored by the Undersea Medical Society and approved for 25 hours of Category I Continuing Medical Education credits.

The purpose of this program will be to provide physicians with the fundamental knowledge in dive medicine based on pathophysiological principles to evaluate and initiate proper therapy in the emergency management of dive related casualties and to perform medical examinations for sport divers.

The program is designed for physicians, physiologists, emergency medical technicians, dive instructors, research personnel and dive industry representatives interested in gaining advanced knowledge in the medical and physiological aspects of diving and dive safety given on a physician's level. Three authorities in the field of dive medicine will serve as instructors for the seminar: C. Gresham Bayne, M.D., Martin J. Nemiroff, M.D. and Edward T. Flynn, M.D.

In addition to the medical seminar, Lee Turcotte's Atlantis Safaris has arranged a complete dive program through Captain Don's Aquaventure Bonaire, situated within the hotel property. Various reef trips and night dives will be scheduled during nonlecture hours. A special course will be available for physicians and their families who wish to become certified scuba divers. The six days on Bonaire, combined with the two days on the sunny cosmopolitan island of Curacao, make for a perfect Caribbean adventure.

For a free brochure and further information about the program, contact: PUMP, P.O. Box 530344, Miami, Florida 33153.

## CAP'N DON'S AGENTS

Captain Don Stewart, Bonaire's salty "curator of divers," has announced the North American travel representatives for his Aquaventure/Habitat dive operation.

Northeast divers should contact Happy Wanderer Travel; in Canada contact Aquaventure Travel Service in Toronto. On the West Coast, see Poseidon Ventures Tours in Newport Beach. And in the Southeast, contact either Airventure Travel in Doraville, Georgia, or Atlantis Safaris in Miami. The Chicago area is represented by the Underwater Adventurers Association.

**SHOULD YOU FLY after diving?**  
check out **MEDIFACTS**  
in the December **skindiver**



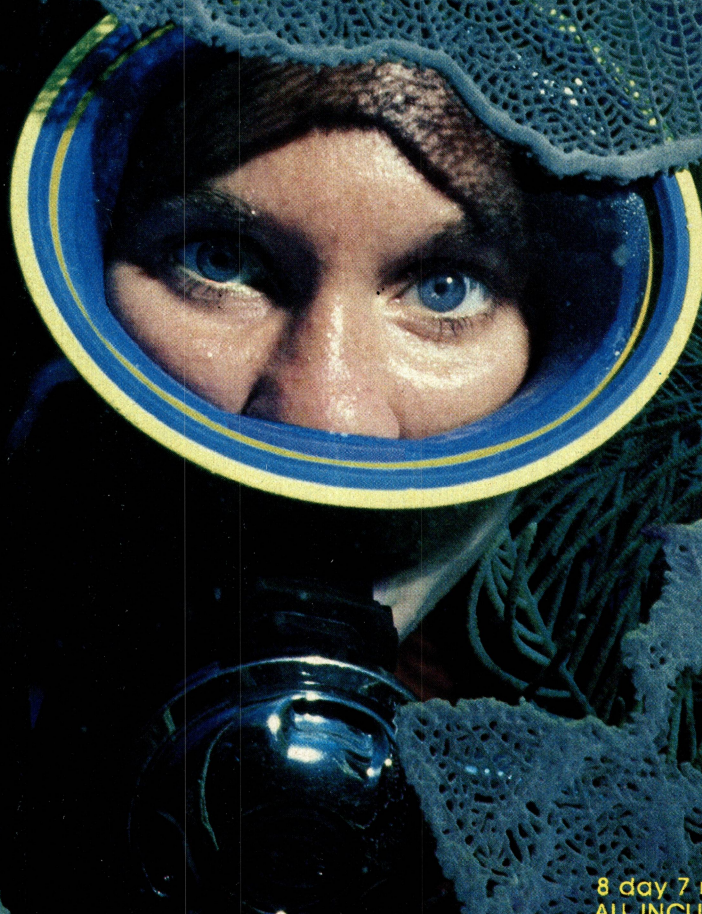
# An Elegant Adventure



Prospect Reef offers you a unique  
blend of superb hotel accommodations  
and maximum diving adventure:



- A country club setting with hotel villas, marina apartments, fine dining, 2 pools, tennis courts, beaches, and marina.
- The wreck of the RMS RHONE at your doorstep, plus a dozen of the finest reef dives in the West Indies.
- The most professional dive resort operation in the BVI, operated by George Marler — Tortola's most experienced dive guide.
- More dives per week than anywhere else in the Virgin Islands . . . 3 dives per day.



For the best in BVI diving, come to  
Prospect Reef Resort, Tortola's finest.

FOR FURTHER INFORMATION  
CONTACT:

IN U.S.A.

Prospect Leisure  
21st Floor,  
515 Madison Avenue,  
New York, NY 10022.  
Telephone (212) 687-8890

IN CANADA

Prospect Leisure,  
7 Wabash Avenue,  
Toronto,  
Ontario, M6R 1N1  
Telephone (416) 534-8463  
Telex: 06-219852

8 day 7 night  
ALL INCLUSIVE  
PACKAGE  
ACCOMODATIONS-MEALS  
15 DIVES

\$612.00	per	\$570.00
winter	person	summer



# Tortola's Top Ten Reefs

BVI'S home of the Rhone offers many more diving delights

Tortola, an island in the British Virgins, is a name which has become synonymous with the classical wreck, the *RMS Rhone*. Just about everyone in diving has heard of it and even those who have not visited the BVI have seen the *Rhone* in Columbia Pictures' treasure diving epic, *THE DEEP*. An ocean steamer 310 feet in length, this magnificent vessel sank during an extremely violent hurricane in 1867. After 111 years of silent slumber in 20 to 80 feet of water, this great ship remains remarkably intact with much of her decking, rigging, steam engine and propeller still visible. Gilded with colorful sponges and flourishing corals, the *Rhone* is perhaps the most impressive shipwreck in the entire Caribbean.

While the wreck of the *Rhone* justifiably deserves the admiration it has received, its worldwide notoriety has overshadowed Tortola's lesser publicized undersea attractions. It is not the only dive which Tortola offers, as there are a surprising number of exceptionally good reef sites which would normally receive far greater acclaim if it were not for the *Rhone*.

In an effort to explore Tortola's other reef attractions, SKIN DIVER contacted George Marler for a guided tour of the best reef dives. Marler is regarded as the most knowledgeable and most experienced dive guide in the area. He has located and charted some 30 different sites to which he conducts regular underwater tours. There is no dive guide better qualified when it comes to touring Tortola's undersea attractions.

Before we depart on the tour with George Marler, it might help to know a little background on where Tortola is and what it's all about. Tortola is the major island in the

BY PAUL J. TZIMOULIS

*Luana Marler takes a look at the unusual formation of pillar coral on Dead Chest Reef, just a short boat ride from Tortola.*

photograph by Geri Murphy







British Virgin Islands: a compact chain of some 60 islands and 100 rocky pinnacles which lie 70 miles east of Puerto Rico and virtually next door to St. Thomas. This tiny necklace of volcanic rock islands spans some 30 miles of the Caribbean, running in an east/west direction and forming a natural deep water shipping lane known as Sir Francis Drake Channel. The islands are set so close together that you could almost swim from one to another and the majority of inter-island travel is accomplished by boat.

Tortola is the largest island in the BVI chain and lies in the western half of the group. The population of Tortola is approximately 9000 people, making it similar in size to the island of Bonaire. The city of Road Town, located on the south shore of Tortola, serves as both the capital of the BVI and a busy shipping port for commercial traffic and chartered sailboats. Since the BVI is a British colony with a self-elected government, the spoken language is English and U.S. dollars are happily accepted. Tortola is just big enough to offer all the conveniences and comforts of modern society, but still small enough to remain quaint, uncrowded and friendly.

As for dive facilities, Tortola is surprisingly well set up and more convenient than most small Caribbean islands of its size. There is a chain of four dive shops known as Aquatic Centres, plus an air fill station on a small island adjacent to the wreck of the *Rhone*. George Marler is somewhat of a cross between a local folk hero and a burgeoning entrepreneur. George started diving in 1958 at the age of 16, when he traded in his Colt six-shooter for a scuba tank and began diving the freshwater lakes of Texas. Soon he was teaching scuba diving at the YMCA in Fort Worth. George made his first Caribbean dive trip in 1970 and immediately recognized his destiny. Accompanied by his young bride of 19, George arrived in Tortola in March 1971 and opened his first dive shop. During the last seven and one-half years, George and Luana have worked an average of 12 hours a day, developing and expanding their business into an efficient chain of four dive shops, two air stations and two dive boats.

An intense undersea photographer, George has also found the time to develop a photography business on the side, known as Marler Industries. He has published his own dive map of the BVI plus a series of underwater postcards and has just completed production of his first book on the wreck of the *RMS Rhone*. His underwater photographs have appeared in several publications, including *SKIN DIVER*. George and Luana quite often work together on underwater photo projects, with Luana acting as underwater model or photographic assistant. George also conducts underwater photography classes at least once or twice a year.

Tortola is literally surrounded by excellent coral reefs and fascinating dive spots. Just a mile or two off the west side of the island lie a number of remote islands including: Jost Van Dyke, Great Tobago, and Great Thatch Island. These areas are seldom dived except for the privileged few who arrive in private sailboats. East of Tortola lies another group of off-shore islands including: Guana Island, Great Camanoe, and Marina Cay. However, it is the islands to the south of Tortola that have become the most popular dive areas. They provide quick and easy accessibility from Road Town Harbour. This chain of islands includes: Norman Island, Peter Island, Dead Chest, Salt Island, Cooper Island, Ginger Island, and of course the wreck of the *Rhone*. Most all of these dive locations can be reached in just a 20 to 30 minute boat ride from Tortola. Even the most distant pinnacle or outside location can be reached in 50 minutes or less. Perhaps the most fascinating aspect of Tortola's many dive sites is the extreme difference between locations and the impressive overall variety of dive terrain available. Let's join our dive guide on a tour of his ten most favorite reefs around Tortola.

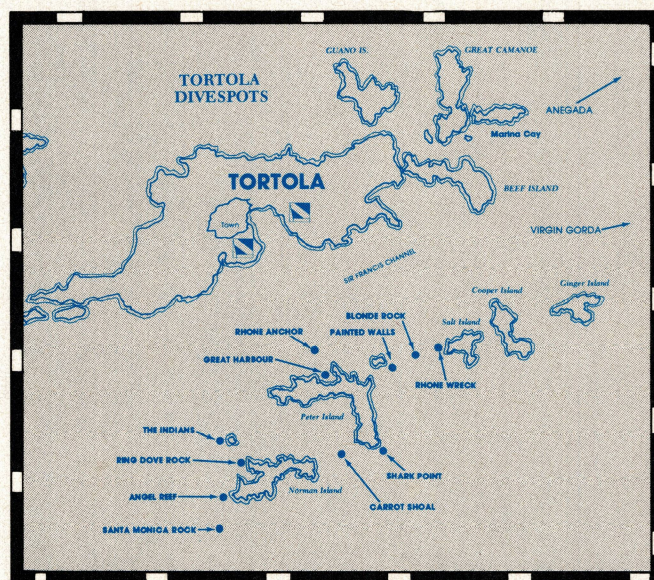
**GREAT HARBOUR** — Directly across the channel from Road Town Harbour lies a large protected bay on the north side of Peter Island. At the center of this bay is a shallow coral reef less than 20 yards offshore, beginning in eight feet of water. Loaded with colorful sponges and a marvelous array of

small marine life, this reef slopes gently to approximately 18 feet and then drops vertically to a depth of 40 feet.

Great Harbour's major attraction is the incredible variety of small marine life which provides an ideal location for underwater macro photography. Few reefs offer the abundance of tube worms or variety of colors found in this quiet water location. Feather dusters can be seen on practically every coral head. Colors range from dark blue, to creamy yellow, or the more common turkey tail pattern. They are unusually large, often measuring six to eight inches across.

Tunicates are equally abundant at Great Harbour, often growing in large clumps like bunches of grapes. They can be found in at least three distinctive colors ranging from dark navy blue to bright electric blue, and some are almost transparent with just a slight blue tint. There are also several unique species of sponges at this dive site, which offer a wide selection of unusual shapes and colors.

**BLONDE ROCK** — There is a large underwater rock pinnacle located in mid-channel between Salt Island and Dead Chest, less than a mile from the wreck of the *Rhone*. Blonde Rock is believed to have been named for a large yellowish patch of fire coral growing on the top of the pinnacle and



A relatively undiscovered resort island, Tortola lies 70 miles east of Puerto Rico and virtually next door to St. Thomas. The reefs surrounding the island are beautiful, unique, and virgin.

clearly visible from the surface. This part of the reef ranges from 9 to 12 feet deep, with the sides of the pinnacle dropping vertically to a depth of 60 feet and a flat sandy bottom. The pinnacle area is approximately 450 feet across, irregular in shape, and covered with lush marine life. The top of the pinnacle is a meadow of willowy seaplumes, swaying seaweeds, purple seafans and small brain coral. It is a scene right out of a picture book, sparkling in color and clarity.

The most prominent feature of Blonde Rock is a vertical coral ledge which winds its way along the east side of the reef. The top of the ledge is 15 feet deep and in many places it is undercut, thus forming a long series of coral caves and crevices. The walls of these formations are virtually covered with flowering cup corals in bright shades of yellow or orange. The ledge is a haven for tropical fish including squirrelfish, boxfish, angelfish, copper sweepers and blackbar soldierfish. The area is a veritable wonderland for both fish photographers and macro buffs.

**PAINTED WALLS** — Perhaps the most unusual reef dive in all of the BVI is a fantastic rock formation located off the southeast side of Dead Chest Island. There is a rocky ridge, partially awash in the foamy surf, and jutting out into the clear blue ocean. Visibility is exceptionally good, often exceeding 100 feet. The back side of the ridge offers good an-



chorage in calm water and the bottom is carpeted with a lush growth of hard corals, soft gorgonians and sponges. George generally starts his tour directly under the boat, circling around the point of the ridge at a depth of 25 feet. Close to the outside point is an extraordinary formation of pillar coral which easily measures nine feet across.

On the seaward side of the rocky ridge, there are two vertical canyons which cut deeply into the ridge. The largest of the two canyons measures 40 feet across and runs for perhaps 150 feet in length. The most intriguing features of this canyon are the "painted walls" which are vertical formations of rock, completely covered with a remarkably colorful array of encrusting sponges. Looking much like Picasso's paint pallet, these walls are decorated in bright hues of crimson, yellow, green, orange, blue, white and lavender. The painted canyon of Dead Chest is possibly the most unusual and most beautiful dive you will experience.

**RHONE ANCHOR** — Approximately one-half mile directly out from Great Harbour lies a reef in 50 feet of water which is considered an important historical site. It is perhaps George Marler's favorite dive location, for this is where he alone discovered the whereabouts of the *Rhone's* long lost anchor. Marler accidentally stumbled across the *Rhone's* anchor chain in February, 1974, while searching for new dive sites. He found over 300 feet of heavily encrusted anchor chain draped across several large coral heads in 55 feet of water. At one end of the chain a huge 12 foot anchor stood perfectly upright with one fluke solidly wedged into the base of a large coral formation. Marler later confirmed identification of the anchor by finding a cup, a dinner plate and an antique bottle within a few feet of the anchor's position. The dinnerware bore the words, "real ironstone china," and the crest, "Royal Mail Steam Packet Company," the company which owned and operated the *RMS Rhone*.

The *Rhone* had originally been anchored off the Royal Mail Steam Packet coaling station on Peter Island when the hurricane first hit on the morning of October 29, 1867. Because of the violent winds and heavy seas, the crew of the *Rhone* could not loosen her anchor from the coral reef below and was finally forced to slip her anchor chain, leaving both anchor and anchor chain on the bottom. It remained lost for over 106 years until its discovery. George has turned this anchor site into an underwater historical trail on which he points out fascinating artifacts such as: the chain, the anchor, the dinnerware still embedded in the coral and a hand blown antique bottle solidly cemented into the reef.

**RING DOVE ROCK** — Located off the north side of Norman Island is another underwater pinnacle similar to Blonde Rock but smaller in size and situated in calmer water. It is 12 feet deep to the top of the pinnacle and the sides drop off to a flat sand bottom at 60 feet. The top of the reef is approximately 150 feet in diameter and it is covered with a heavy growth of hard corals, sea fans, soft gorgonian corals and colorful sponges. A huge school of sergeant majors is constantly milling around the top of the reef and must include 200 or 300 of these colorful marine tropicals.

The sides of the reef slope off on a 45 degree angle and are covered with an equally abundant growth of marine life. The reef is ideal for macro photography for there are many types of plume worms, feather dusters, and Christmas tree worms of every color. It is another popular site for underwater photographers who want to concentrate on marine life and tropical fish. Visibility at this location ranges from 50 to 80 feet.

**ANGEL REEF** — One of Marler's best sightseeing dives is a sloping reef located off the western point of Norman Island. Depths here range from 10 to 90 feet, with the high point of the dive being a visit to the bottom of the channel where a large colony of angelfish resides. There is plenty of fish action at this particular site because of the swift flowing currents in the nearby channel and the close proximity to the open sea.

George begins the dive in the shallow water close to shore, weaving in and out of a series of tall rocky ridges and narrow stone canyons. Large stands of elkhorn coral can be seen

growing along the tops and sides of these rock formations. From this point, George leads his guests out toward open sea and down the slope. A large school of palmetto fish is frequently seen at the top of the reef, and often divers sight other pelagic species such as horse-eye jack and amberjack. The reef slopes from 30 feet to 90 feet where the water turns a bright blue and visibility increases to 120 feet. The lower levels of this coral slope are dotted with many huge basket sponges, some of them large enough to hold a diver.

**THE INDIANS** — Located west of Pelican Island is a dive site marked by several tall cylindrical rock formations jutting out of the water like stone statues of cigar store Indians. Depths at this site range from 15 to 50 feet, and George's underwater tour takes you completely around the rock formation. This site offers perhaps the greatest variety of hard corals with many excellent examples of elkhorn, staghorn, brain, and star corals. There is also an abundance of reef fish in this area including all types of butterflyfish, slender filefish, blue chromis, and trumpetfish.

Several small caves are located on the east side of the Indians and the interior of these shadowy formations offers an excellent opportunity to photograph colorful cup corals which line the walls and schools of copper sweepers which hide in the darker recesses. The caves are also an excellent area for finding banded coral shrimp for macro photography purposes. There is a tunnel connecting two of these rocky caves, with a passage that measures 5 feet in diameter and approximately 15 feet long.

**SANTA MONICA ROCK** — There is a large underwater rock pinnacle located almost a mile south of Norman Island and situated close to the open ocean. The top of this pinnacle is approximately 100 yards in diameter and rises to within 10 feet of the surface. The base of this formation is an estimated 400 yards in diameter and reaches a depth of 70 feet. Because of its close proximity to the open ocean, visibility at this site is exceptionally good and often exceeds 125 feet horizontally.

The top of Santa Monica Rock is covered with a lush growth of soft gorgonians and stony corals, much like the top of Blonde Rock. There is an abundance of reef fish, including angelfish, grouper, grunts and other local species. Quite frequently divers see schools of spadefish, French grunt, chub and horse-eye jack. There is a considerable amount of pelagic fish activity, as this rocky pinnacle serves as an attractive beacon to passing schools of cruising fish. The south and east sides of this pinnacle offer a near vertical drop-off running from depths of 20 to 50 feet.

**CARROT SHOAL** — There is a long underwater ridge situated in mid-channel between Peter Island and Norman Island. Unlike the rocky pinnacles mentioned so far, Carrot Shoal is a 500 foot long stony ridge which is only 20 yards wide and rises up from the sandy channel floor some 30 feet or so. Depths on this formation range from 30 feet at the top to 65 feet at the base. It is an unusual ridge formation with distinctive step formations marking the various strata of rock. The top of the shoal is covered with tightly packed corals, sea fans and soft gorgonians. There are many small caves and undercuts along the sides of the ridge and many are filled with small fish and marine life.

There is a large rock tunnel at the northwest end of this ridge, with a passage that measures four feet high, 12 feet wide and 15 feet in length. Fish are often seen in the tunnel, including such species as: blackjack, French angelfish and queen angelfish. The area is also frequented by green turtles and sometimes even a hawksbill. The area is also a popular breeding ground for nurse sharks at certain times of the year, and George Marler has counted up to six sharks on one dive.

**SHARK POINT** — Perhaps the most exciting dive in the Tortola area is Shark Point, located off the southeast tip of Peter Island and facing directly into the open sea. This is really a wild spot with big fish action and underwater visibility often exceeding 150 feet.

A rocky ridge of broken stone extends out from shore for at least one-quarter mile underwater. Depths along this ridge



range from 25 feet at the top to 65 feet at the base. At one point, the branching ridge of stone forms a miniature amphitheater with two entrances and walls of sheer vertical rock rising up some 35 feet. It forms a natural fish basin, often trapping pelagic species which happen to be cruising through the area. Further along, there are two parallel stone ridges 40 feet apart, forming a natural roadway for a distance of 250 feet. The bottom of this rocky highway is covered with white sand, with vertical stone walls rising up 10 to 15 feet.

There is a great deal of fish life in this area, including schools of blue runner, horse-eye jack, spadefish, and amberjack. Bottom dwelling species include: huge queen triggerfish, big parrotfish, orange filefish, and a pair of exquisite queen angelfish the size of dinner plates. It is an area of high voltage action especially interesting for veteran travelers.

Because of space, we have limited our coverage to the ten top reefs in the Tortola area. However, there are many others with equally intriguing names such as: Dead Chest Reef, Dry Rocks, Boot Hill, Cooper Wall, Ten Fathom Pinnacle, The Bite, Sand Flats, and so on. Marler has pinpointed at least 20 more dive locations which are well worth the time and cost of exploration. Perhaps the most difficult decision to make is whether to push on to new locations or make a second dive at some delightful spot which could hardly be appreciated in a one scuba tank visit. A week seems hardly enough time to cover even half of what Tortola has to offer.

As for hotel accommodations and services, you'll find Tortola a delightful surprise. It has a surprising number of well appointed hotels which offer deluxe accommodations, superb dining and excellent service. Designed primarily for the yachting trade, Tortola's fine selection of hotels is most definitely a notch above the accommodations found on other Caribbean islands of similar size. There are a total of 15 resort hotels in the Tortola area, of which five specifically cater to visiting divers on a regular basis.

Prospect Reef Resort is by far the largest hotel on Tortola with a total of 53 rooms and 120 beds. This is an elegant country club style resort located right on the water, just west of Road Town Harbour. It has its own marina, two swimming pools, two restaurants, tennis courts and its own small shopping mall. The rooms at Prospect Reef range from single or double studios to larger cottages, and even several executive villas. Most important, Prospect Reef is the headquarters for George Marler's operation with a dive shop, dive boat, and air compressor plant right on the premises. You'll find Marler's 27 foot Lindsay, the *Tejas*, berthed directly in front of the dive shop, with the air station barely 50 yards away.

Prospect Reef offers a special diver's package for \$612.00 (winter rate) which includes eight days/seven nights double occupancy, three meals a day and a total of 15 dives. The summer '79 rate is \$570, which is still a bargain.

Treasure Isle Hotel is a cozy hillside resort located approximately at the center of Road Town Harbour, with an excellent view of the bay and various marinas. The atmosphere is very casual and the service is most friendly. It is an excellent location for dive groups, with a total of 25 rooms and 50 beds. Best of all, the food at Treasure Isle is absolutely exquisite. Treasure Isle also offers a diver's package which includes eight days/seven nights double occupancy, 15 dives and three meals daily — all for \$684 (winter rate). As yet, they have not established their summer rate package.

Marina Cay is a small hilltop hotel located on its own island off the west end of Tortola. This operation, with a total of 16 rooms and 32 beds, is large enough to accommodate small dive groups or individual visitors. The resort includes a restaurant, boat anchorage and a beach bar. Marina Cay utilizes the services of Dive BVI at Virgin Gorda for their scuba diving, snorkeling trips, etc. They offer a special diver's package for \$637.25 (winter rate) which includes eight days/seven nights double occupancy, three meals daily, and a total of 15 dives. Their summer '79 rate for the same package is \$476.25.

The Mariner Inn is a marina style hotel specifically designed for yachtsmen but occasionally catering to divers as

well. This operation is located on the east side of Road Town Harbour and serves as headquarters for a sailboat charter service known as The Moorings Ltd. A dive shop is located on the premises and bookings can be conveniently made for daily dive trips. While the Mariners Inn does not have a special diver's package, its room rates are quite reasonable.

Peter Island Yacht Club is an exclusive luxury hotel designed and built by a Norwegian company and located in a quiet cove at Peter Island. The meals and services of this unique resort are outstanding but it is only open during the winter season. Perhaps the greatest advantage of Peter Island Yacht Club is that it is the hotel located closest to the wreck of the *Rhone*. At present, they do not offer a diver's package but will make dive tour arrangements for hotel guests.

Getting to Tortola can be almost as much fun as diving there. While this island is definitely off the beaten path of tourism, it is surprisingly easy to reach. In fact, you have a considerable choice of airlines and methods for traveling to this quiet Caribbean island.

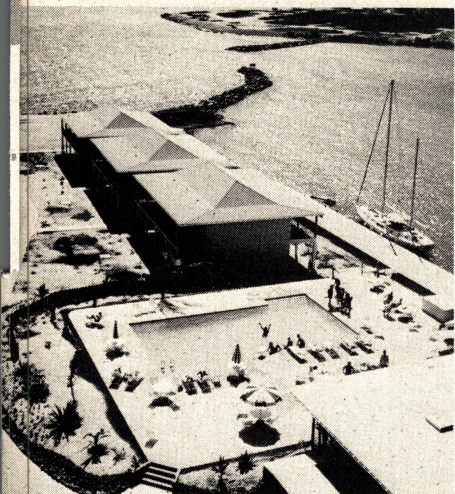
Perhaps the best known route is to fly from the U.S. mainland to San Juan, Puerto Rico, via commercial jet. Both American Airlines and Eastern Airlines offer a variety of daily flights for your convenience. At San Juan, you transfer to a smaller airline service such as: Prinair, Air BVI or All Island Air. All three offer daily flights from San Juan to the Beef Island Airport at Tortola. From there it is a short taxi ride to one of the many hotels at Road Town Harbour.

An alternate route which offers some interesting shopping opportunities is to fly from the U.S. mainland to St. Thomas. At St. Thomas you can transfer to Prinair or All Island Air and continue your journey to Beef Island. Still another way is to transfer to Antilles Air Boat at St. Thomas Harbour and fly directly to Tortola Harbour. This is perhaps the most exciting and picturesque method of reaching Tortola as you will be flying from harbor to harbor via an amphibian aircraft and flying low over the islands for a very scenic tour.



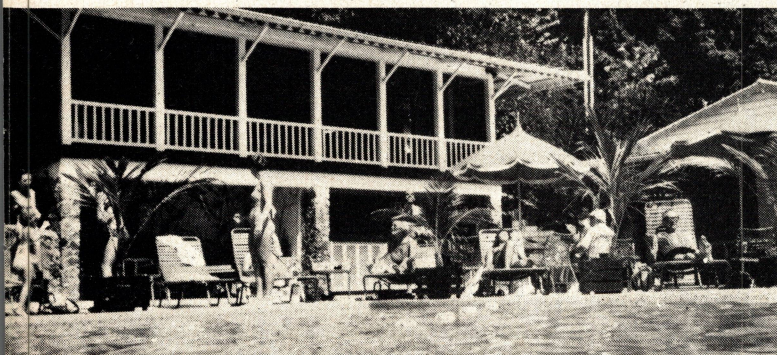
The Prospect Reef Resort has its own marina and is headquarters for George Marler's Aquatic Centres. Marler's 27 foot *Tejas* (above and right) is berthed directly in front of the dive shop.





*The Mariner Inn (left) is specifically designed for yachtsmen but occasionally caters to divers as well. A dive shop is conveniently located on the premises.*

*The Treasure Isle Hotel is a cozy hillside resort overlooking the harbor. The atmosphere is casual and the service most friendly.*



Tortola is still a relatively undiscovered resort destination, and retains the "old Caribbean charm" which everyone seeks. The people are happy and outwardly friendly toward American visitors. Most importantly, Tortola has a lot more to offer than just one lovely shipwreck. The reefs which surround this island are quite unique, unusually beautiful and still virgin. ➤

## TORTOLA INFORMATION GUIDE

For more information, brochures, or prices, write or call:

BVI Aquatic Centres  
P.O. Box 108  
Road Town, Tortola  
British Virgin Islands  
Tel: 42858 or 42859  
George & Luana Marler,  
Owners

Prospect Reef Resort  
P.O. Box 104  
Road Town, Tortola  
British Virgin Islands  
Tel: 43311  
Elihu Rhymmer,  
Chief Executive

Treasure Isle Hotel  
P.O. Box 68  
Road Town, Tortola  
British Virgin Islands  
Tel: 42501  
Peter Wimbush,  
Manager

Mariner Inn  
P.O. Box 139  
Road Town, Tortola  
British Virgin Islands  
Tel: 42332  
Ginny & Charlie Cary,  
Owners

Marina Cay Hotel  
P.O. Box 76  
Road Town, Tortola  
British Virgin Islands  
Tel: 42174  
Galen & Elaine Young,  
Managers

Peter Island Yacht Club  
P.O. Box 211  
Road Town, Tortola  
British Virgin Islands  
Tel: 42561 or 42562  
The Manager

BVI Tourist Board  
P.O. Box 134  
Road Town, Tortola  
British Virgin Islands  
Tel: 43134  
Mrs. Eileen Parsons,  
Exec. Secy.

Air BVI  
P.O. Box 85  
Road Town, Tortola  
British Virgin Islands  
Tel: 52356 or 52357  
Jim Masters,  
General Manager

All Island Air Taxi  
St. Thomas Airport  
St. Thomas,  
U.S.V.I. 00801  
Tel: (809) 774-1700

Antilles Air Boats  
Seaplane Base  
Christensted, St. Croix  
U.S. Virgin Islands 00820  
Tel: (809) 773-1776  
Julie Rasmussen,  
Sales Manager

Prinair  
1020 Ashford Ave.  
San Juan,  
Puerto Rico 00908  
Tel: (809) 725-5224  
Mike Martinez,  
Sales Manager

Bomba Charger Ferryboat  
People's Bank Building  
St. Thomas, U.S.V.I. 00801  
Tel: (809) 774-7920





# Treasure Isle Hotel

Tortola  
British Virgin Islands

The Divers' Headquarters In the B.U.I.

A 40 room hillside hotel overlooking Road Town Harbour with its own marina, freshwater pool, tennis and island beach club.

The atmosphere is informal and the food fantastic. Ideal for families, groups or dive clubs.

Minutes from Tortola's Top Ten — 2 dive boats, compressor, or sail and dive. Diving under the supervision of Capt. George Marler.

Special group packages with group leader free on 8 or more in group.

For information and reservations:

- Treasure Isle Hotel, P.O. Box 68, call Tortola 42501
- New York office at 501 Madison Ave., (212) 935-9095
- The Moorings, P.O. Box 50059, New Orleans, La. 70150 (504) 834-0785

## Spend more time under water, not flying over it...

Announcing ALM's nonstop service—

Miami to **BONAIRE**

Starting October 29th you can fly nonstop from subtropical Miami to totally tropical Bonaire...every Saturday. Leaving from Miami means you don't have to worry about being snowed in...or out, on your Bonaire vacation. Ahhh.

And what a vacation. Crystal clear waters. Warm and teeming with life. The whole island's one big reef. So no matter where you dive...right off the beach or with one of the many professionally guided tours, you're in for the dives of your life.

It all begins with a comfortable, friendly flight on ALM. You leave Miami at 3 PM. And you're in Bonaire just in time for a spectacular sunset dive.

For information or reservations, see your travel agent. Or call ALM Antillean Airlines: In New York, (212) 459-6900. In Chicago, (312) 782-7366. In Miami, (305) 526-6445 or toll free (800) 327-7197.

**ALM**  
the airline of the dutch caribbean

## OCEANUS EXPEDITION TO HONDURAS

Oceanus/School of the Sea, Inc. will offer instruction in U/W archaeology as part of an expedition to explore old wrecks off the coast of Honduras. Based in Port Royal, participants will sail and dive along the south coast of the Bay Isles, concentrating on wrecks that pre-date Columbus. The largest number of amphorae yet recovered in the Caribbean have been found here.

The trip will take place March 20 through 26, 1979. The cost for seven days and seven nights is \$515 and includes accommodations, air, tanks, weights and use of U/W cameras. Instruction in diving, seamanship and navigation, water safety, and coral reef ecology will also be available. Accommodations will be aboard Oceanus yachts.

For information on this and other sail/dive expeditions, contact: Oceanus, Box 431, Ho-Ho-Kus, New Jersey 07423.

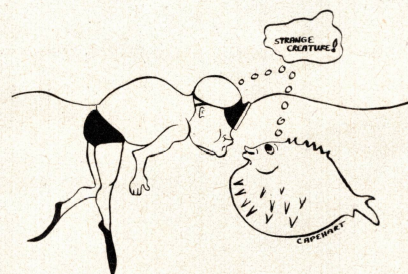
## SOUTH CAICOS PADI ITC

The Admiral's Arms Inn on South Caicos Island in the West Indies was the scene of a PADI ITC recently. Under the directorship of Dave McKnight, instructor candidates from five U.S. states and two foreign countries were evaluated on their knowledge, lecture capability and scuba skills.

After eight days of classroom presentations, pool demonstrations and open water evaluations, those meeting PADI's standards were granted the coveted rating of open water scuba instructor.

The Admiral's Arms Inn was an ideal setting for the ITC. The hospitable environment of a dive-oriented hotel, coupled with the warm, clear waters and cooling sea breezes, made the hard work of the candidates far more enjoyable.

For information concerning this unique diver's hotel contact: Turk-Cai Watersports, 84C Walnut Street, Ft. Devens, MA 01433.





Sightseeing...Cozumel style.

Whether you're a scuba pro...or brand new to the sport...you'll experience your best diving ever in Mexico. Our waters are famous for their clarity. In fact, visibility of 200 feet is a common occurrence at Cozumel's Palancar Reef, one of the finest diving areas in the world. Our waters are exceptional, also, for their warmth. So you can explore as long as you like. You'll see caves filled with exotic coral and colored sponges. And when was the last time you came upon ancient shipwrecks, mammoth sea turtles, porpoises and parrot fish? In Mexico, you can see all of these...and more!

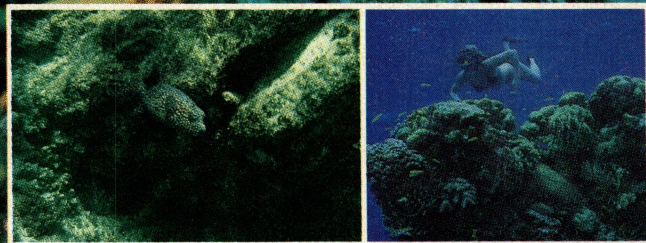
Expert diving instruction and equipment rental are available all along the shores of the Mexican Caribbean, Gulf Coast, Pacific Coast and the Baja Peninsula. In no time, you'll be discovering the other side of Mexico. An underwater world too beautiful to be real.

# The deep down pleasures of

# MEXICO

THE *Amigo* COUNTRY

Secretaria de Turismo • Consejo Nacional de Turismo



See your ASTA Travel Agent or mail coupon to:

SD 11/78



**MEXICO:  
THE AMIGO COUNTRY**

MEXICAN GOVERNMENT TOURIST OFFICE

9701 Wilshire Blvd. — Suite 1201  
Beverly Hills, Calif. 90212

Tell me more. Please send me your  
"Wonderful Mexico" brochure.

Name

Address

City

State  Zip

(Please print)



# BONAIRE

NETHERLANDS ANTILLES

"Never Missed a Dive Since Oct. 23, 1972"



For more information about diving on Bonaire write to:

BONAIRE GOVERNMENT  
TOURIST BUREAU  
685 Fifth Avenue  
New York, N.Y. 10022

Tele: 212-838-1797

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

**ALM**

The Airline of the Dutch Caribbean

Enjoy the most efficient, hassle-free diving  
in the Caribbean — 365 days a year.

PHOTO BY ALICE HUGHES

## SILVER SPRINGS U/W FILM CAPITAL

BY DORIS RENEE

**B**ack in 1924 when W. C. Ray, Sr. bought 40 acres of Florida land just outside Ocala, he never dreamed his holdings would

photograph by Courtland Richards



mushroom to 4000 acres and become one of Florida's outstanding tourist attractions.

Florida's Silver Springs has become an U/W film capital drawing thousands of tourists each day. Visitors thrill at the new Wild Waters Park, ride on one of 21 electric powered glass bottom boats, and take jungle cruises.

A 30 minute ride on the Silver River gives visitors a chance to gape, not only at water fowls, including mallards and American egrets, but at the myriad of colorful plant life below the surface. Fish and snails, alligators and turtles call the game preserve home.

The jungle cruise along "14 Waterway" provides a glimpse of panther, deer, wildcats, racoons, giraffes and rhinos roaming not far from shore. Seven jungle boats each carry 70 people on half hour trips from early morn until closing.

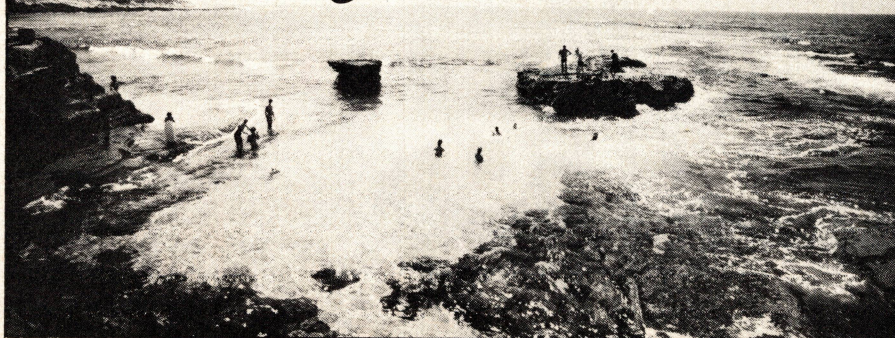
A pair of monkeys turned loose after the filming of MGM's original six *Tarzan* pictures have long since populated the area with their descendants.

Not only MGM, but RKO, Warner Brothers, Universal, Paramount, Columbia and 20th Century Fox have come to Silver Springs to shoot all or parts of many films.

The military has used the area to make jungle warfare survival films. And more and more — since the American Broadcasting Co., bought the property — divers and camera crews, prop-makers and technicians come to film U/W TV commercials and features.

W. C. Ray, Jr., son of the former owner and manager of wildlife and natural resources, brought in pink porpoises from the Amazon River. Jordan Klein, an award winning

## DISCOVER SAN DIEGO'S secret beach dives in the December **skin diver**





underwater cameraman, arranged for sharks to arrive in time for the *Six Million Dollar Man* scenes he photographed.

Leon Cheatom, who has been with the Springs for 26 years, is supervisor of boats. But he also is responsible for making certain underwater life is not disturbed. "We don't want plants to be uprooted or logs moved," worried Cheatom. Game preserve officials are notified each time someone enters the water within 3000 yards of shore.

When a car was taken underwater for a commercial recently, Cheatom made sure the body was steam-cleaned and the gas and oil removed to prevent contamination.

Outboard motors have been tested. Fishing tackle and shaving cream, potato chips and waterproof Band-Aids have all been photographed at Silver Springs.

The Springs charges a location fee, "but it's well worth it," declares Klein who wants to see the area become the underwater film capital — not only of the USA, but of the world.

And if he has his way, it will. The innumerable requests Klein receives for underwater camera work may very well be shot in Florida's beautiful Silver Springs. >

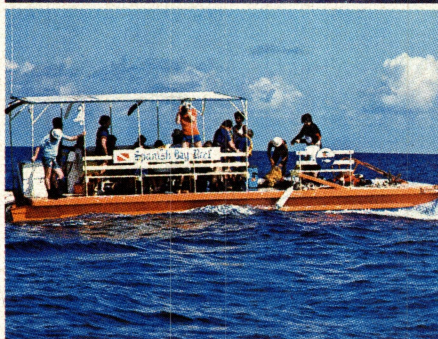
#### POSEIDON VENTURES TOURS TO MICRONESIA

Art Travers of Poseidon Ventures Tours, longest established and most experienced dive tour operator in Micronesia, offers continuing Micronesian dive programs. Included are the Blue Tour, featuring Palau and Truk Lagoon, and the Gold Tour featuring Truk Lagoon, Ponape, and other exotic islands. Both are priced from \$750 per person for the 14 day programs. Poseidon Ventures Tours is the prime operator of Continental Airlines' Scubamerica dive programs.

These Micronesian dive programs are led by specialized dive tour coordinators from the island of Guam who have been trained to expertly interface with the local native population so that tours run smoothly. All are NAUI or PADI certified instructors and are experts in U/W photography as well as wreck and cave diving.

Monthly departures are available throughout the year. Space on upcoming holiday trips is also still available. These depart from the West Coast on December 15 and December 29, 1978.

For information and brochures contact Poseidon Ventures Tours, 359 San Miguel Dr., Newport Beach, CA 92660. >



## Spanish Bay Reef

"Spanish Bay Reef, Grand Cayman . . . the best of the lot."

*Undercurrent*

"Among dive resorts, the one called Spanish Bay Reef is often called the best in the Caribbean."

*Miami Herald*

"Among the finest, most in-depth courses is that offered by Jim and Cathy Church at Spanish Bay Reef Resort on Grand Cayman Island in the British West Indies."

*"40" Magazine*

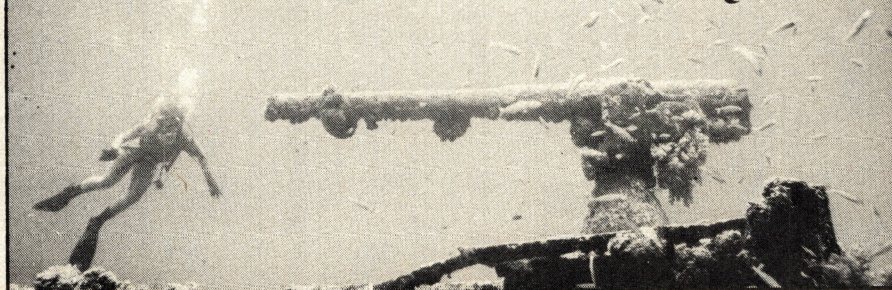
"If you think that a diver's resort must be primitive and isolated from civilization to provide great diving and restful solitude — you haven't been to Spanish Bay Reef."

*Skin Diver*



**Spanish Bay Reef**  
Box 800/Grand Cayman/British West Indies  
P.O. Box 114/Point Clear, AL 36564  
(205)626-1058

**Come dive the  
GHOST FLEET**  
in December with skin diver





## LET ME ENTERTAIN YOU

BY GAIL LOWELL

California north coast diving was never like this! A 500 pound turtle eating out of your hand, a leopard shark swimming casually within camera distance, a 50 pound sea bass close enough to touch! Where is all this happening? In the largest saltwater aquarium in the world, located at Marine World/Africa, USA, in Redwood City, California. Twenty-two feet deep, loaded with kelp bass, sprinkled with garibaldi and sheephead, and livened up by four very nosy loggerhead turtles, Marine World may offer the most unusual dive spot in California.

Through the combined efforts of Marine World and the Central California Council of Diving Clubs (Cen-Cal), three divers — Ken Silverman, Ned Simpson and myself — were given the opportunity to dive in the Marine World reef aquarium for the grand opening week-end of their summer shows. We were joined by divers Kathy Palmer and Dave Williams, who were there to test the Hydrocom™ U/W communication system.

Oceanic/Farallon representatives set up two Hydrocom™ units, Marine World provided food for the fish and turtles and, with a little safety advice from Cen-Cal representative Ken Silverman, we were turned loose.

For the first dive, I was hooked up to one of the Hydrocom™ systems. With an antenna strapped to my ankle, a microphone in the full-face mask (I could breathe through my nose!), a speaker at my waist and the battery and electronics unit attached to my tank, I looked like an underwater Bionic Woman. The unit was set up to allow me to talk to the divers in the water and also to the Marine World visitors on the other side of the windows. The divers could hear me from several feet away and, with the speaker pressed against a window, the dry folk could hear me just as clearly. Most of the visitors were so surprised they just waved and laughed, but the kids found it great fun to say hello to the fish and divers. It was such an unusual experience, I went through a tank of air pretty fast trying to talk to everyone.

On the afternoon dive, with a goody bag full of silver smelt, I naively entered the tank to feed the fish. All of a sudden those disinterested, lazily swimming fish became



photograph by Ken Silverman

super-charged and super-animated, dashing about so quickly there seemed to be thousands of them. I casually tossed smelt around, secretly wished I was wearing gloves, and prayed that my buddies were keeping an eye on Chomp the 500 pound turtle that had so obligingly given me a ride earlier in the day.

The smelt disappeared quickly and I went back to clowning in front of the windows. The audience loved it, I loved it.

## THE CAYMANS



A world of undersea worlds. Whether you're an experienced diver or making your first open water check-out, few undersea worlds offer as many different experiences as the Caymans.

The most beautiful reefs in the Caribbean begin a few yards from shore in depths of 14 to 40 feet.

Off Little Cayman, a living coral cliff plummets 750 feet into the deep.

Over 300 known wrecks in the area. Visibility usually 200 feet. Enough dive sites and conditions to fill a dozen log books.

Qualified dive masters to guide you. Dive shops with complete rental gear.

Compressors—some on boats. A two-man recompression chamber on Grand Cayman.

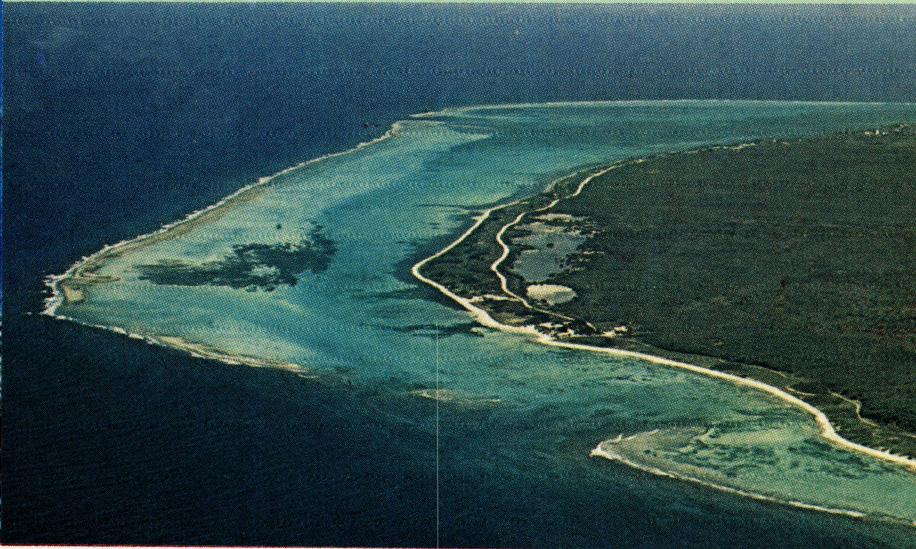
Dive lodges. Cottages. Oceanfront hotels. Luxurious clubs and villas.

An hour's flight from Miami on Cayman Airways. For information and reservations call 305-444-6551.

Or write:

**CAYMAN ISLANDS  
DEPARTMENT OF TOURISM**

250 Catalonia Ave., Coral Gables, FL 33134







photograph by Van Worley

I'm not sure how I'm going to record this one in my dive log, but it's a day of diving I'll never forget.

So how can you arrange a similar out-of-the-ordinary dive experience at Marine World? Currently, dives are being organized for weekends and holidays by Cen-Cal. Cen-Cal is responsible for choosing certified divers for the day, introducing them to Marine World personnel, getting food for the fish, teaching divers how to handle the turtles, and other typical divemaster duties. Safety is emphasized and, although the tank is not deep and there's no crashing surf to fight, buoyancy compensators and pressure gauges are required. Part of the plan, besides entertaining the public, is to demonstrate how much fun safe scuba diving can be.

A proposal has been submitted to Marine World to have a taped narrative played at the tank whenever divers are present. Some of the things the narrative will explain are where the divers are from and what they are doing, why the divers are wearing certain types of gear, what can be learned from scuba diving courses, and a little about the experience and feeling of diving.

Although the Hydrocom underwater communication systems were used on this occasion for testing purposes, Oceanic/Farallon Industries proposed to donate two of the units to Marine World for use by other divers visiting the tank.

Of course, when your dive is done and you realize there's no cliff to climb to get back to your car, you still have plenty of time to see the shows, eat cotton candy, and play with the land-dwelling animals at Marine World/Africa, USA.

For information concerning diving in the reef tank write: Director of Scuba, Cen-Cal, P.O. Box 779, Daly City, CA 94017.

## Share your best U/W photos... **SCUBA-CHROME** Custom Color Labs



CUSTOM LAB SERVICES FOR THE SERIOUS UNDERWATER PHOTOGRAPHER IS OUR ONLY BUSINESS. Our standards are strictly professional and are for the diver who wants to enter contests, sell his work or just hang his work with pride. See how good your photos can look, done by skilled craftsmen who understand the problems of the u/w photographer.

CUSTOM INTERNEGATIVES. Excellent quality prints up to 30"x40" are possible from good sharp 35mm slides if good internegs are used. We make only 4x5 enlarged negatives on self masking negative material instead of the machine made negatives offered by many labs.

INTERNEGATIVE, alone .....\$6.00  
With print order of \$15 or more ..... 3.75

COLOR PRINTS. We offer only the finest prints, carefully printed, balanced and cropped by hand. Prints up to 16x20 are flush mounted on matte board.

Size	First print	Add'l. prints	Flush Mount
8x10	\$ 7.50	\$ 4.25	N.C.
11x14	12.00	8.00	N.C.
16x20	21.50	15.00	N.C.

All orders shipped within 10 working days.

Fla. residents add 4% sales tax. Postage & handling charges, \$1.00 for orders up to \$30.00, \$2.00 for orders over \$30.00.

### WRITE FOR FREE COLOR FOLDER

Tells you how to enjoy your U/W photos more. Tips on using photos for decor and how to sell your work.

### FREE 16x20 PRINT

See the difference custom prints make. Order first print at reg. price \$21.50, and get an extra print, same neg. FREE. GET 2 FOR 1. Prints from slide, add \$3.75 for neg. Postage & handling \$2 per set. Fla. res. add 4% sales tax.

### SCUBA-CHROME

4911 W. Grace St., Tampa, FL 33607  
A Div. of Creative Color Inc.



Kodak paper.  
For a good look at the times of your life.™

## DIVE TORTOLA'S TOP TEN



# AQUATIC CENTRES

BRITISH VIRGIN ISLANDS

- 150 TANKS
- 3 COMPRESSORS
- SPECIALLY BUILT DIVE BOAT
- THE FIRST AND ONLY DIVE SHOPS SERVICING TORTOLA & PETER ISLAND
- PERSONALIZED SERVICE-SUPERIOR DIVING

DIVING PACKAGES FOR EVERYONE!

DIVING SALES, TOURS, INSTRUCTION AND EQUIPMENT RENTAL.

### CONTACT:

George and Luana Marler  
P.O.Box 108s, Road Town, Tortola, British Virgin Islands.



# SUPER DIVE BOAT

## FLAT TOP

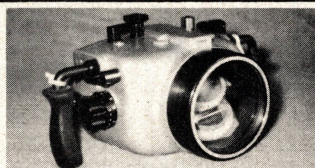
- FAST
- SEAWORTHY



USED BY PROFESSIONALS WORLDWIDE • FIBERGLASS HULLS  
WITH BELOW DECK STORAGE • CAPACITIES TO 10,000 LBS.  
BRISTOL BLUEWATER BOATS, INC.  
270 ELY AVE., S. NORWALK, CT 06854  
(203) 853-0405 • TELEX 964334

## SWISS CRAFTSMANSHIP

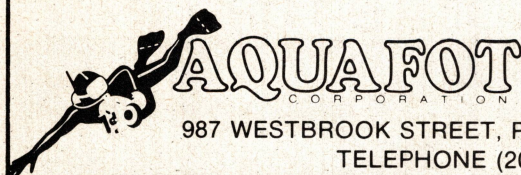
Rene Hugenschmidt is recognized throughout Europe as one of the foremost designers of under-water photographic equipment. Since 1953 Hugyfot Switzerland has led the field in camera housing design because of their attention to esthetic appeal, balance, control location, lens versatility and pressure integrity — each housing is pressure tested to 360 ft. These are the qualities most sought after by the professional or discriminating amateur u/w photographer. Now these superb Swiss made housings are available through Aquafot Corporation, sole U.S. distributor. Send for brochure for further details on these housings and other products available.



Pro 35 \$725.00  
For Nikon F, Canon F-1 (equipped with speedfinder prism). Includes 2 sets of lens gears, flat port and extension ring.



Hugyflex \$475.00  
For Yashika FX-2, Olympus OM1—OM2, Canon AE-1, Pentax ME—MX. Includes flat port and lens gears for normal lens.  
Prices subject to change without notice.



987 WESTBROOK STREET, PORTLAND, MAINE 04102  
TELEPHONE (207) 774-8700



Sea Symbols®  
by Robert L. Straight

Nautilus Shell (Actual Size)  
Sterling Silver 14K Gold  
Small - \$22.00 \$41.00  
Large - \$34.00 \$109.00

### About the Artist

A unique combination of diver and sculptor, Robert L. Straight using his knowledge of the underwater world has created a truly unique collection of jewelry and sculpture from the sea. Fashioned for those divers who want only the very best and have the highest regard for the underwater world.

For catalog send \$1.00 to: Robert L. Straight  
8439 Barkley, Houston TX 77017 713/643-4051

## BULLOCH RECEIVES NJ COUNCIL AWARD

The New Jersey Council of Diving Clubs, at its 1978 Symposium, presented its third Diving Service Award to David K. Bulloch. The Award is given annually to that individual or organization whose service to the dive commun-



ity deserves appreciation and recognition. Lee Ward, president of the N.J. Council, presented the award.

Bulloch's commitment to the dive community spans 20 years. As a PADI scuba instructor, he has appeared at many national seminars lecturing on the marine environment and underwater photography. Bulloch is national president of the American Littoral Society and has been a leader in the fight to end ocean dumping.

## DIVING MEDICINE FOR THE PRIMARY PHYSICIAN

A three-day basic review and update of diving medicine for physicians will be presented by the University of California School of Medicine, San Francisco, Calif., November 16, 17, and 18. The course will be held at the Jack Tar Hotel, Van Ness and Geary, in San Francisco.

The course meets the criteria for 15 hours in Category I of the AMA's Physician's Recognition Award and the Certification Program of the California Medical Association.

Program chairperson is Alex Weisskopf, MD, Associate Clinical Professor of Otolaryngology, at UCSF's School of Medicine. Other faculty members include: Albert R. Behnke, Jr., MD; Takashi Hattori, MD; Harry J. MacDannald, MD; Harold C. Ross, MD; Vincent S. O'Hara, MD; and Glen H. Egstrom, PhD.

Course fee is \$150. (For interns, residents and fellows with a letter of verification, the fee is \$75.) A block of rooms has been reserved at the Jack Tar Hotel for conference participants. Please make reservations directly with the hotel.

Make checks payable to: Regents, Univ. of Calif. and mail to: Extended Programs in Medical Education, Univ. of Calif., 1308—3rd Ave. San Francisco, CA 94143. For registration information, call: (415) 666-2483. For program information, call: (415) 666-4251.

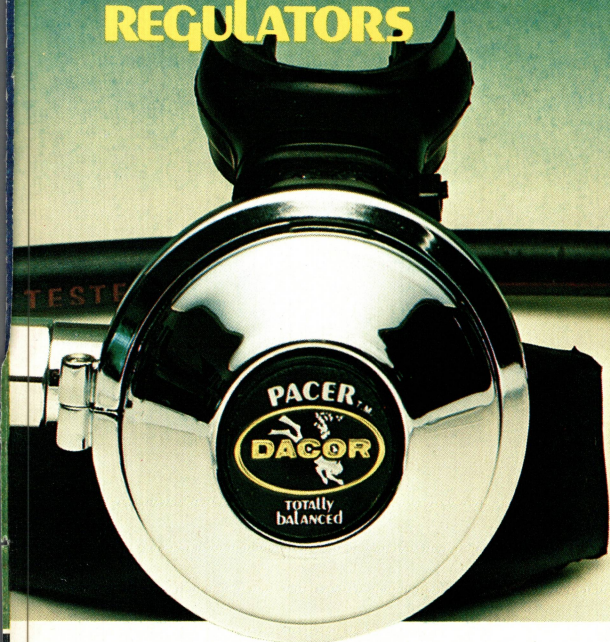


# ALL NEW DACOR PACER™ \*

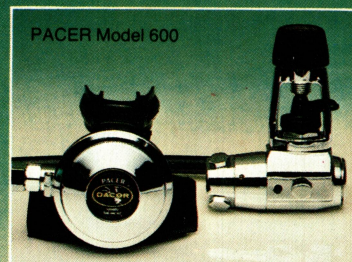
## \*Positive Air Controlled Equalizing Regulator™

PATENTS PENDING

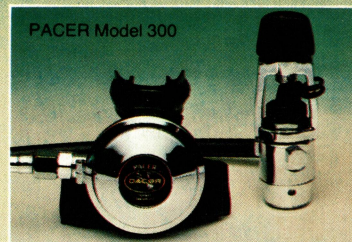
### A WHOLE NEW GENERATION OF REGULATORS



PACER Model 900



PACER Model 600



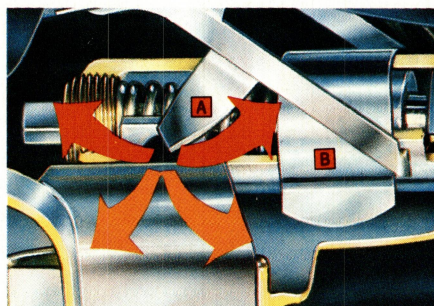
PACER Model 300



PACER Model 150

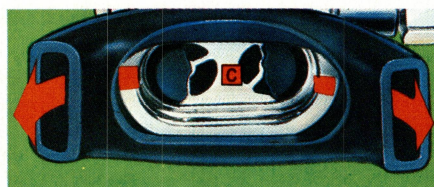
## FIRST TOTALLY BALANCED SECOND STAGE FEATURING THE EXCLUSIVE VENTURAMATIC™ SYSTEM

Dacor is proud to present a complete new line of PACER\* regulators. These \*Positive Air Controlled Equalizing Regulators are not just an improvement but the most important innovation in regulator "breathability" in the 25 years we have been manufacturing diving equipment. Dacor has harnessed a principle of physics known as "Venturi" and invented a revolutionary *Venturamatic* System that completely "air balances" the PACER second stage. At the same time Dacor's *Venturamatic* System controls run-away "Venturi" flow, surging, and free-flow—which, until now, have been a problem with all high volume regulators. The PACER's smooth laminar flow allows the diver to get the air he needs when he needs it and, at the same time, provides the same smooth, natural respiration as surface breathing at any depth and under the most extreme demand conditions. Dacor's exclusive *Dual Exhaust* feature ideally matches the PACER's large volume inhalation with the 50% easier exhalation effort.



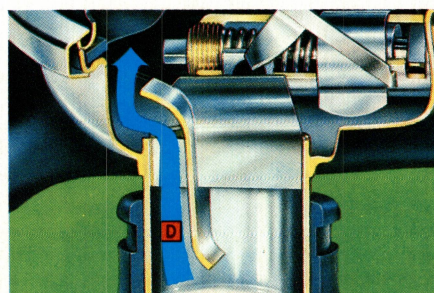
### Exclusive Venturamatic™ System

(PATENTS PENDING) Here's how it works—As air flow increases with lowering of valve lever, the *Venturamatic Flow Vane* (A) which is an integral part of the lever itself, also lowers and disperses the air stream in amount and direction related to volume of flow to prevent surging and uncontrolled venturi. The *Venturamatic Booster Clip* (B) effectively directs air flow to create and control venturi, making valve opening easier under high volume demand.



### Exclusive Dual Exhaust System

Here's how it works—Two large exhaust valves (C) eliminate exhalation resistance and make the PACER 50% easier in exhalation effort and purging.



### Exclusive Anti-Free Flow Device

Here's how it works—When PACER is removed from the mouth underwater, water enters special chamber (D) thus balancing ambient water pressure on internal side of the diaphragm and stopping air flow. This function is automatic and takes a maximum of 3 seconds.



**DACOR CORPORATION**  
161 Northfield Road  
Northfield, Illinois 60093  
P.O. Box 157

Send \$2.00 for Dacor Diver's Kit. Includes catalog, cloth patch, decomp. table, decals.



# WE SUIT YOUR NEEDS . . . U. S. DIVERS'

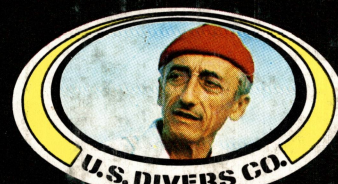


See your Aqua-Lung® Dealer and Pages 22,  
23, 24 and 25 of the New 1978 U. S. Divers Catalog.



## U.S. DIVERS CO.

3323 West Warner Avenue, Santa Ana, CA 92702



Jacques-Yves Cousteau  
Chairman of the Board

Copyright U. S. Divers 1978 Part No. 7577-31

A Subsidiary of Liquid Air Corp. of North America

